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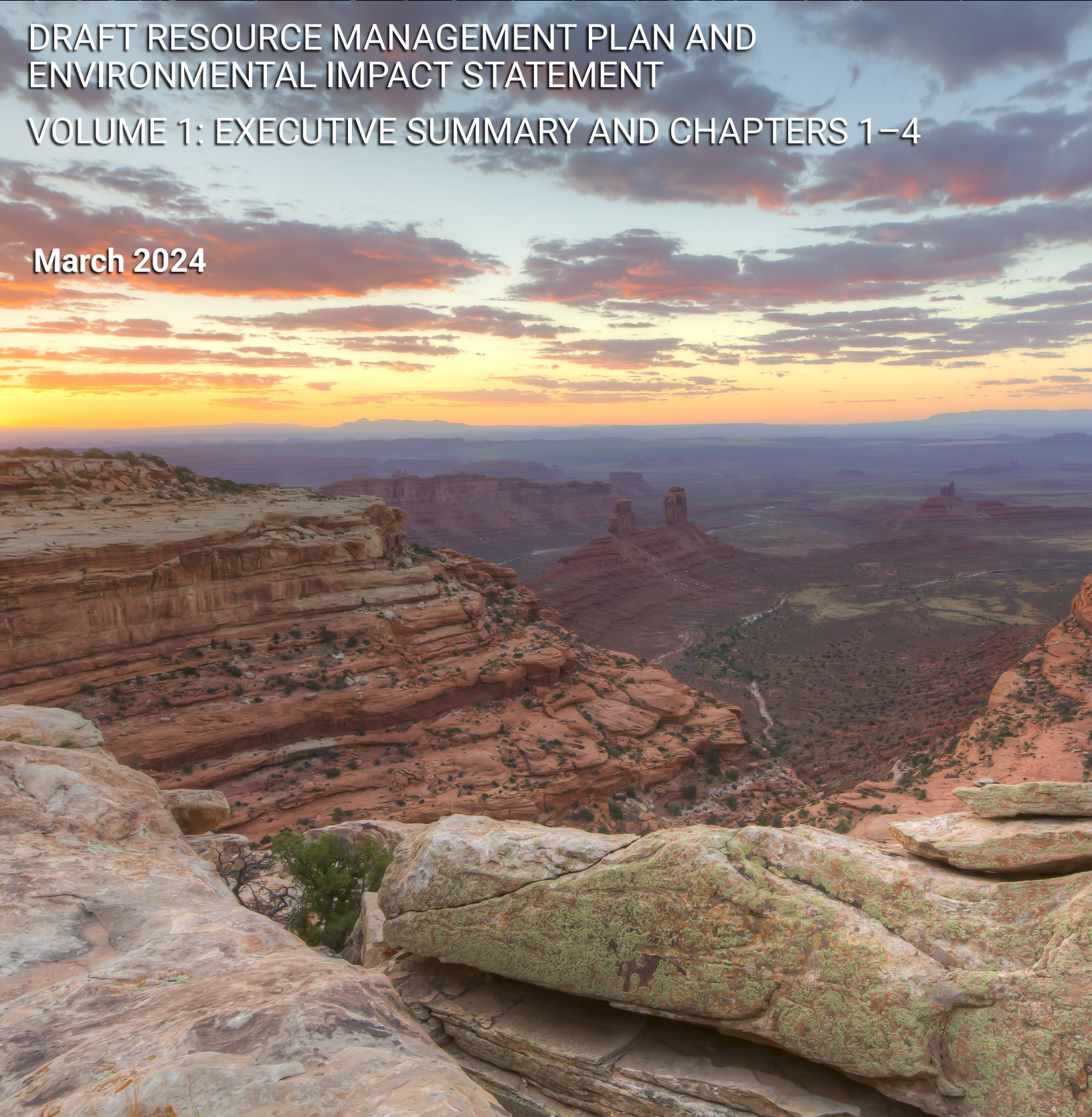
Bears Ears National Monument

San Juan County, Utah

**DRAFT RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT**

VOLUME 1: EXECUTIVE SUMMARY AND CHAPTERS 1-4

March 2024



U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

BLM Mission

The BLM's mission is to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.

U.S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE

USDA Forest Service Mission

The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

Sunset in the Bears Ears landscape overlooking one of the many canyons of Cedar Mesa
Photograph by Bob Wick provided by the Bureau of Land Management

BEARS EARS NATIONAL MONUMENT RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

Responsible Agencies: United States Department of the Interior, Bureau of Land Management
United States Department of Agriculture, U.S. Forest Service

Document Status: Draft (X) Final ()

Abstract: This draft Resource Management Plan and Environmental Impact Statement (RMP/EIS) has been prepared by the United States Department of the Interior, Bureau of Land Management (BLM) and United States Department of Agriculture, U.S. Forest Service (USDA Forest Service) with expertise from Tribal Nations, including those of the Bears Ears Commission (BEC), and input from cooperating agencies, the public, and stakeholders. The purpose of the RMP/EIS is to protect and provide proper care and management to the “object[s] of antiquity” and “objects of historic or scientific interest” of the Bears Ears National Monument (BENM) that were identified in Presidential Proclamations 9558 and 10285. The RMP/EIS will also provide a comprehensive framework for the BLM’s and USDA Forest Service’s allocation of resources and management of the federal lands within BENM pursuant to the specific direction in Presidential Proclamation 10285.

The draft RMP/EIS describes and analyzes five alternatives for managing BENM in San Juan County, Utah. The No Action Alternative is a continuation of current management; under this alternative, federal lands and resources would continue to be managed under existing management plans to the extent those plans are consistent with Proclamation 10285. The existing management plans applicable to the Monument include the 2008 Monticello Field Office Approved Resource Management Plan, as amended; the 2008 Moab Field Office Resource Management Plan, as amended; the 1986 Manti-La Sal National Forest Land and Resource Management Plan, as amended; and the 2020 Bears Ears National Monument: Record of Decision and Approved Monument Management Plans, Indian Creek and Shash Jáa Units. Alternative B would apply on-site and prescriptive management to protect BENM objects. Alternative C utilizes permits and off-site interpretation and education for public uses in high-use areas to reduce impacts to more remote locations. Alternative D would allow for the continuation of natural processes by limiting or discontinuing discretionary uses. Alternative E maximizes the consideration and use of Tribal perspectives on managing the landscape of BENM with an intent to emphasize resource protection and stewardship. Alternatives B–E were developed using input from the BEC, public, stakeholders, and cooperating agencies. Major planning issues addressed include cultural resources and recreation management.

Review Period: Comments on the Bears Ears National Monument draft RMP/EIS will be accepted for 90 calendar days following publication of the BLM’s and USDA Forest Service’s notice of availability in the *Federal Register*.

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In Reply Refer To:
DOI-BLM-UT-Y020-2022-0030-RMP-EIS

Dear Reader:

Enclosed for your review and comment is the draft Resource Management Plan and Environmental Impact Statement (RMP/EIS) for the Bears Ears National Monument (BENM). The draft RMP/EIS was prepared by the United States Department of the Interior, Bureau of Land Management (BLM) and United States Department of Agriculture, U.S. Forest Service (USDA Forest Service) in accordance with the National Environmental Policy Act of 1969, the BLM's land use planning regulations at 43 Code of Federal Regulations 1600, and other applicable laws.

On October 8, 2021, Presidential Proclamation 10285 restored the BENM boundaries and conditions established in Presidential Proclamation 9558, and retained approximately 11,200 acres that were added to the Monument by Presidential Proclamation 9681. Presidential Proclamation 10285 declares that the entire landscape reserved by the Proclamation is "an object of historic and scientific interest in need of protection" and that in the absence of a reservation under the Antiquities Act, the objects identified within the boundary of BENM are not adequately protected.

In developing the draft RMP/EIS, the BLM and USDA Forest Service have developed a range of management alternatives to protect Monument objects. The agencies have developed this range of alternatives by coordinating closely with the Bears Ears Commission (BEC), consulting with Tribal Nations, considering issues raised through public scoping and coordination with cooperating agencies, and considering applicable planning criteria. This process has resulted in the development of five alternatives, including the No Action Alternative, which represents a continuation of current management under existing management plans, to the extent they are consistent with Proclamation 10285. The alternatives are described in their entirety in Chapter 2 of the draft RMP/EIS. The BLM and USDA Forest Service have identified Alternative E as their preferred alternative. Chapter 3 presents the affected environment and analyzes the potential impacts to resources or resource uses from implementation of the alternatives. Chapter 4 describes the BLM's and USDA Forest Service's consultation and coordination efforts throughout the process.

The BLM and USDA Forest Service encourage the public to review and provide comments on the draft RMP/EIS. Of particular importance is feedback concerning the adequacy of the alternatives, the analysis of environmental consequences from management decisions under the alternatives, and any new information that would help the BLM and USDA Forest Service develop the proposed RMP/final EIS. In developing the proposed RMP/final EIS, which is the next phase of the planning process, the agencies may reorganize and mix various management actions from the alternatives in the draft RMP/EIS to assist in their decision-making process and promote their goal of developing a management strategy that best meets their purpose and need.



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The draft RMP/EIS is available on the project website at: <https://eplanning.blm.gov/eplanning-ui/project/2020347/510>. Hard copies are also available for public review at BLM offices within the Planning Area.

Public comments will be accepted for ninety (90) calendar days following the BLM's and USDA Forest Service's publication of its Notice of Availability in the *Federal Register*. The BLM and USDA Forest Service can best use your comments and resource information submissions if received within the review period. Written comments may be submitted as follows (submittal of electronic comments is encouraged):

ePlanning Website: <https://eplanning.blm.gov/eplanning-ui/project/2020347/510>

Mail: Monument Planning, BLM Monticello Field Office
365 North Main
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To facilitate analysis of comments and information submitted, we encourage you to submit comments in an electronic format. Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. Although you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

Public meetings will be held at various locations around BENM and surrounding areas to provide the public with opportunities to submit comments and seek additional information. The locations, dates, and times of these meetings will be announced at least 15 days prior to the first meeting via a press release and on the project website: <https://eplanning.blm.gov/eplanning-ui/project/2020347/510>.

Thank you for your continued interest in the Bears Ears National Monument RMP/EIS. We appreciate the interest and information you contribute to the process.

Sincerely,

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ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µeq/L	micro-equivalents per liter
µg/L	micrograms per liter
µg/m ³	micrograms per cubic meter
µS/cm	microsiemens per centimeter
4WD	four-wheel drive
ACEC	area of critical environmental concern
AF	acre-feet
AIM	Assessment, Inventory, and Monitoring
AMP	allotment management plan
AMS	analysis of the management situation
AR6	Intergovernmental Panel on Climate Change Sixth Assessment Report
ARPA	Archaeological Resources Protection Act
ATV	all-terrain vehicle
aU	assessment unit
AUM	animal unit month
BEC	Bears Ears Commission
BEITC	Bears Ears Inter-Tribal Coalition
BENM	Bears Ears National Monument
BIL	Bipartisan Infrastructure Law
BLM	Bureau of Land Management
BMPs	best management practices
BPS	biophysical setting
BSC	biological soil crust
CAA	Clean Air Act
CASTNET	Clean Air Status and Trends Network
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO _{2e}	carbon dioxide equivalent
CRMP	cultural resources management plan
CWA	Clean Water Act
dBA	A-weighted decibel
DFC	desired future conditions
DOI	U.S. Department of the Interior
DWSP zone	Drinking Water Source Protection zone
<i>E. coli</i>	<i>Escherichia coli</i>
EA	environmental assessment

EIS	environmental impact statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERMA	extensive recreation management area
ESA	Endangered Species Act
ESD	ecological site description
ESR	Emergency Stabilization and Rehabilitation
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIA	Forest Inventory and Analysis
FLPMA	Federal Land Policy and Management Act
FMP	fire management plan
FMRS	Fire Management Reference System
FMU	Fire Management Unit
FO	field office
FR	Forest Road
FRG	Fire Regime Groups
FSH	Forest Service Handbook
FSM	Forest Service Manual
GDE	groundwater-dependent ecosystem
GHG	greenhouse gas
GIS	geographic information system
GMO	genetically modified organism
gpm	gallons per minute
GPRA	Government Performance and Results Act
GPZ	groundwater protection zone
GSENM	Grand Staircase-Escalante National Monument
HAP	hazardous air pollutant
HM	head month
HUC	hydrologic unit code
IDT	interdisciplinary team
IMP	interim management policy
IMPLAN	Impact Analysis for Planning Model
IMPROVE	Interagency Monitoring of Protected Visual Environments
IPCC	Intergovernmental Panel on Climate Change
IPM	integrated pest management
IRA	inventoried roadless area
ISA	instant study area (Note: Lands formerly in this category are referred to as wilderness study areas.)
ISRP	Individual Special Recreation Permit
IWG	U.S. Interagency Working Group on Social Cost of Greenhouse Gases
kg/ha-yr	kilograms per hectare per year
kg N/ha	kilograms nitrogen per hectare

kg S/ha	kilograms sulfur per hectare
KPLA	known potash leasing area
LMF	landscape monitoring framework
LMP	land management plan
LRMP	land and resource management plan
LTA	land tenure agreement
LWC	lands with wilderness characteristics
MA	management area
MAC	Monument Advisory Committee
mg/L	milligrams per liter
MIS	Management Indicator Species
MIST	Minimum Impact Suppression Tactics
mpsa	magnitudes per square arcsecond
MSO	Mexican spotted owl
MZ	management zone
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NADP	National Atmospheric Deposition Program
NBNM	Natural Bridges National Monument
NCLs	National Conservation Lands
NEP	non-essential experimental population
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NFMA	National Forest Management Act
NFPORS	National Fire Plan Operations and Reporting System
NFS	National Forest System
NHD	National Historic District
NGO	nongovernmental organization
NLCS	National Landscape Conservation System
NO ₂	nitrogen dioxide
NOI	notice of intent
NO _x	nitrogen oxides
NPS	National Park Service
NRA	National Recreation Area
NRCS	Natural Resources Conservation Service
NTU	nephelometric turbidity unit
NVUM	National Visitor Use Monitoring
NWI	National Wetlands Inventory
NWSR	National Wild and Scenic Rivers
OHV	off-highway vehicle
ONRR	Office of Natural Resources Revenue
ORVs	outstandingly remarkable values
PAC	Protected Activity Center

PAOT	people at one time
PFC	proper functioning condition
PFYC	Potential Fossil Yield Classification
PIF	Partners in Flight
PILT	payments in lieu of taxes
PL	Public Law
PM2.5	particulate matter less than 2.5 microns in diameter
PM10	particulate matter less than 10 microns in diameter
ppb	parts per billion
ppm	parts per million
PRPA	Paleontological Resources Preservation Act of 2009
PWRs	public water reserves
RAMP	recreation area management plan
RAS	Rangeland Administration System
RFFA	reasonably foreseeable future action
RM	river mile
RMA	recreation management area
RMIS	Recreation Management Information System
RMP	resource management plan
RMZ	recreation management zone
RNA	Research Natural Area
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
RSC	recreation setting characteristic
RV	recreational vehicle
SCC	species of conservation concern
SC-GHG	social cost of greenhouse gases
SFHA	Special Flood Hazard Area
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objective (USDA Forest Service)
SMS	Scenery Management System (USDA Forest Service)
SMU	soil map unit
SO ₂	sulfur dioxide
SQRU	Scenic Quality Rating Units
SR	State Route
SRMA	special recreation management area
SRP	Special Recreation Permit
SSA	sole source aquifer
SSI	Springs Stewardship Institute
SSURGO	Soil Survey Geographic Database
SUP	special use permit
SWCP	soil and water conservation practices

SWReGAP	Southwest Regional Gap Analysis Project
T&E	threatened and endangered
TDS	total dissolved solids
TMDL	total maximum daily load
TMP	travel management plan
UAS	unmanned aircraft system
UDAQ	Utah Division of Air Quality
UDWQ	Utah Division of Water Quality
UDWR	Utah Division of Wildlife Resources
UGS	Utah Geological Survey
U.S.	United States
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTV	utility task vehicle
UWRI	Utah Watershed Restoration Initiative
VCC	Vegetation Condition Class
VCMQ	Vegetation Classification, Mapping, and Quantitative Inventory
VDEP	vegetation departure
VOCs	volatile organic compounds
VQO	Visual Quality Objective (USDA Forest Service)
VRI	Visual Resource Inventory (BLM)
VRM	Visual Resource Management (BLM)
WFDSS	Wildland Fire Decision Support System
WINI	watershed improvement needs inventory
WPA	Works Progress Administration
WSA	wilderness study area (Note: Lands formerly considered instant study areas are within this category.)
WSR	wild and scenic river
WUI	wildland-urban interface

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EXECUTIVE SUMMARY

ES-1 Introduction

The *Bears Ears National Monument Draft Resource Management Plan and Environmental Impact Statement* (RMP/EIS) presents and analyzes management alternatives for the federal lands and resources administered by the Bureau of Land Management (BLM) and U.S. Department of Agriculture Forest Service (USDA Forest Service) within Bears Ears National Monument (BENM, or Monument). The Planning Area, which is located in San Juan County, Utah, and comprises approximately 1.36 million acres of federal land, is coextensive with BENM.

BENM represents the culmination of more than a century of efforts to protect the ancestral homeland of five Tribal Nations. On October 8, 2021, Presidential Proclamation 10285 restored the Monument boundaries and conditions established by Presidential Proclamation 9558 and retained approximately 11,200 acres that were added to the Monument by Presidential Proclamation 9681. Presidential Proclamation 10285 declares that the entire landscape reserved by the Proclamation is “an object of historic and scientific interest in need of protection” and that in the absence of a reservation under the Antiquities Act, the objects identified within the boundary of BENM are not adequately protected. Presidential Proclamation 10285 specifies that BENM ensures “the preservation, restoration, and protection of the objects of scientific and historic interest on the Bears Ears region, including the entire monument landscape,” and it re-establishes the Bears Ears Commission (BEC) of Tribal Nations in accordance with the terms, conditions, and obligations set forth in Proclamation 9558 to ensure that “management decisions affecting the monument reflect expertise and traditional and historical knowledge of Tribal Nations.”

The BLM and the USDA Forest Service (collectively referred to as “the agencies”), in coordination with the BEC and cooperating agencies, are jointly preparing this RMP/EIS pursuant to the National Environmental Policy Act (NEPA), BLM land use planning regulations at 43 Code of Federal Regulations 1600, and other applicable laws.

Proclamation 10285—in accordance with the Antiquities Act of 1906—dedicates the lands in BENM to specific uses by designating the Monument and reserving the entirety of the lands in the restored boundary of BENM as the smallest area compatible with the protection of its objects.

In addition to Proclamation 10285, the federal lands within the Planning Area are currently managed by the BLM and the USDA Forest Service primarily under the following land use plans:

- *Bears Ears National Monument: Record of Decision and Approved Monument Management Plans Indian Creek and Shash Jáa Units* (BLM 2020). The document is referred to hereafter as the 2020 ROD/MMPs.¹
- *Bureau of Land Management Moab Field Office Record of Decision and Approved Resource Management Plan* (BLM 2008a). The document is referred to hereafter as the 2008 Moab RMP.²

¹ The 2020 ROD/MMPs is referred to frequently throughout this RMP/EIS, and therefore the author-date citation is provided here at first mention only.

² The 2008 Moab RMP is referred to frequently through this RMP/EIS, and therefore the author-date citation is provided here at first mention only.

- *Bureau of Land Management Monticello Field Office Record of Decision and Approved Resource Management Plan*, as amended (BLM 2008b). The document is referred to hereafter as the 2008 Monticello RMP.³
- *Land and Resource Management Plan: Manti-LaSal National Forest*, as amended (USDA Forest Service 1986). The document is referred to hereafter as the 1986 Manti-La Sal LRMP.⁴

ES-2 Purpose and Need

Proclamation 10285 directs the BLM and USDA Forest Service to “prepare and maintain a new management plan for the entire monument” for the specific purposes of “protecting and restoring the objects identified [in Proclamation 10285] and in Proclamation 9558.”

Accordingly, the agencies’ underlying purpose and need is to provide a framework, including goals, objectives, and management direction, to guide management of BENM, consistent with the protection of BENM objects, and other applicable laws, regulations, and policies.

The following purposes and desired outcomes are set forward explicitly in Presidential Proclamation 10285, represent direction and guidance required in BLM and USDA Forest Service regulations and policy, and address present and historical BENM management challenges. Associated needs and challenges that the RMP will address are summarized in greater detail in Chapter 1, Purpose and Need, Section 1.1.

1. Protect Monument objects in large, remote, rugged, and connected landscapes. This includes the entire Bears Ears landscape and the collection of objects and resources that the Monument was established to protect.
2. Protect the historical and cultural significance of this landscape. This includes objects identified in Presidential Proclamation 10285 such as numerous archaeological sites, locations facilitating modern Tribal uses and other traditional descendant community uses, historic routes and trails, historic inscriptions, and historic sites.
3. Protect the unique and varied natural and scientific resources of these lands. This includes objects identified in Presidential Proclamation 10285 such as biological resources, including various plant communities, relic and endemic plants, diverse wildlife, including unique species, and habitat for Endangered Species Act (ESA)–listed species.
4. Protect scenic qualities, including night skies; natural soundscapes; diverse, visible geology; and unique areas and features.
5. Protect important paleontological resources.
6. Ensure that management of these lands will incorporate Tribal expertise and traditional and historical knowledge related to the use and significance of the landscape.
7. Provide for uses of Monument lands, so long as those uses are consistent with the protection of BENM objects.

³ The 2008 Monticello RMP is referred to frequently throughout this RMP/EIS, and therefore the author-date citation is provided here at first mention only.

⁴ The 1986 Manti-La Sal LRMP is referred to frequently throughout this RMP/EIS, and therefore the author-date citation is provided here at first mention only.

ES-3 Issues Considered

The agencies identified issues to be addressed in the RMP/EIS through public scoping, internal scoping, government-to-government consultation and information sharing with Tribal Nations, and outreach to cooperating agencies.

Table ES-1 presents the primary issues identified during internal and external scoping that are within the scope of the development of the RMP and that are analyzed in detail. These resources are organized into two general categories: the natural environment and the built environment (see Section 3.4 and Section 3.5). Resources are categorized this way based on perspectives shared by members of Tribal Nations in the *Bears Ears Inter-Tribal Coalition: A Collaborative Land Management Plan for the Bears Ears National Monument (2022 BEITC LMP)* (Appendix L), which discusses connections and distinctions among aspects of the natural world and human constructs.⁵

Table ES-1. Issues Analyzed in Detail

Resource Topic	Issues
NATURAL ENVIRONMENT	
Paleontological Resources and Geology	<ul style="list-style-type: none"> How would proposed management decisions regarding paleontological resource management (such as curation, protection, survey, collection, outreach, and interpretation) impact paleontological resources, research communities, local communities, and visitor experience? How would proposed land use allocations and discretionary uses impact paleontological resources? How would proposed land use allocations and discretionary uses impact unique geological features?
Soils and Biological Soil Crusts	<ul style="list-style-type: none"> How would existing and proposed land use allocations affect the structure, health, and function of soil resources (including biological soil crusts and other sensitive soils) across the landscape? How would BENM management actions impact soils (e.g., degradation, erosion, preservation, etc.), including biological soil crusts and other sensitive soils?
Water Resources (Groundwater, Surface Water, Wetlands, Riparian Areas, Floodplains, Water Quality)	<ul style="list-style-type: none"> How would BENM management affect surface water hydrology, water quality, water quantity, and riparian and wetland areas? How would BENM management affect groundwater quality and quantity, groundwater-dependent ecosystems, public Drinking Water Source Protection zones, groundwater protection zones, or associated surface water resources?
Terrestrial Habitat and Vegetation Resilience and Conservation (large-scale and local ecotypes)	<ul style="list-style-type: none"> How would existing and proposed management prescriptions (such as those made for livestock grazing, recreation, and lands and realty actions) and discretionary uses affect terrestrial vegetation, including special status plant species? How would existing and proposed vegetation management affect terrestrial vegetation and special status plant species?
Noxious Weeds and Nonnative Invasive Plants	<ul style="list-style-type: none"> How would existing and proposed land use allocation decisions about grazing, recreation, lands and realty actions, and discretionary uses affect noxious weeds and invasive nonnative plants? How could existing and proposed vegetation management affect noxious weeds and invasive nonnative plants?
Fuels, Wildfire, and Prescribed Fire and Forestry and Woodlands	<ul style="list-style-type: none"> How do existing and proposed vegetative treatments (e.g., prescribed fire, thinning) and harvesting affect the health and preservation of woodlands, the objects of the Monument related to forests, and Indigenous peoples' traditional and ceremonial uses? How do current and proposed fire and fuels management techniques affect ecosystem function, fire regime, cultural resources, and health and human safety?
Lands with Wilderness Characteristics	<ul style="list-style-type: none"> How would proposed land use allocations and discretionary uses affect the apparent naturalness, size, and outstanding opportunities for solitude or primitive and unconfined recreation of lands with wilderness characteristics?

⁵ The 2022 BEITC LMP is referred to frequently throughout this RMP/EIS, and therefore the author-date citation is provided here at first mention only.

Resource Topic	Issues
Special Land Designations for Conservation and Protection	<ul style="list-style-type: none"> • How would management of BENM affect suitable wild and scenic river segments)? • How would proposed management prescriptions and other management actions affect the relevant or important values of existing and nominated Areas of Critical Environmental Concern and the ecological values of Research Natural Areas? • How would relevant and important values be impacted by the decision to not carry forward or not designate an Area of Critical Environmental Concern? • How would BENM management affect the values and wilderness characteristics associated with wilderness study areas?
Wildlife and Fisheries	<ul style="list-style-type: none"> • How would proposed management affect wildlife and fisheries habitat and populations including special status species and species otherwise generally identified in Proclamations 10285 and 9558? • How would the proposed management affect state wildlife agency habitat management goals and associated actions related to big game winter and summer range movement and migration corridors and migration corridors for birds, insects, and fish?
Visual Resources and Scenery	<ul style="list-style-type: none"> • How would proposed management actions affect scenic quality, landscape (scenic) character, scenic integrity, and the public's highly valued experience of enjoying scenery? • How would proposed management actions affect inventoried visual values?
Natural Soundscapes	<ul style="list-style-type: none"> • How would proposed management actions under the alternatives affect natural quiet soundscapes?
Air Quality	<ul style="list-style-type: none"> • How would proposed management actions and management prescriptions contribute to air pollutant emissions and affect air quality and visibility?
Night Skies	<ul style="list-style-type: none"> • How would proposed management actions under the alternatives affect dark night skies?
BUILT ENVIRONMENT	
Cultural Resource Management, Indigenous People's Religious Concerns, and Tribal Use	<ul style="list-style-type: none"> • How would the proposed management affect continued traditional uses of religious or cultural importance to Tribal Nations? • How would the BENM resource management plan affect cultural resources, including cultural landscapes, traditional uses, and historic properties? • How would the BENM resource management plan provide information and education about cultural resources, including cultural landscapes, traditional uses, and historic properties, to the public? • How would the BENM resource management plan affect uses of cultural resources?
Archaeological Sites and Historic Communities, Historic Resources	<ul style="list-style-type: none"> • How would BENM management impact archaeological resources (pre-contact, post-contact, and multicomponent in temporal affiliation) that are either not eligible, eligible or listed in the National Register (i.e., historic properties)? • How would the BENM resource management plan affect cultural resources, including cultural landscapes, traditional uses, and archaeological historic properties? • How would the BENM resource management plan provide information and education about cultural resources, including cultural landscapes, traditional uses, and archaeological historic properties, to the public? • How would BENM management impact post-contact historic communities and/or post-contact historic archaeological locations that are either not eligible, eligible, or listed in the National Register (i.e., historic properties)? • How would the BENM resource management plan affect historic communities and post-contact historic properties? • How would the BENM resource management plan provide information and education about historic communities and post-contact historic properties to the public?
Environmental Justice and Social and Economic Values	<ul style="list-style-type: none"> • Would proposed management result in disproportionate or adverse impacts on environmental justice populations? • How would proposed management impact jobs and income in the socioeconomic analysis area? • How would proposed management impact the nonmarket benefits individuals receive from BLM-administered and NFS lands and public resources?
Lands and Realty	<ul style="list-style-type: none"> • How would proposed land use allocations and discretionary uses affect land use authorizations and land tenure the Planning Area?
Recreation Use and Visitor Services	<ul style="list-style-type: none"> • How would proposed management affect the agencies' ability to provide recreation objectives, recreation setting characteristics, and Recreation Opportunity Spectrum classes?
Travel, Transportation, and Access Management	<ul style="list-style-type: none"> • How would proposed travel designations affect the travel and transportation system in BENM, including impacts to resources?
Livestock Grazing	<ul style="list-style-type: none"> • How would proposed management of Monument objects affect rangeland forage conditions and livestock grazing operations, including range improvements?

Resource Topic	Issues
Climate Change	<ul style="list-style-type: none"> • How would land use allocations and discretionary uses in BENM contribute to greenhouse gas emissions? • How would land use allocations and discretionary uses affect long-term carbon storage and sequestration in BENM?

ES-4 Alternatives

ES-4.1 Actions Common to All Alternatives

All alternatives incorporate the intent of the intergovernmental cooperative agreement between the Tribal Nations that make up the BEC and the BLM and USDA Forest Service to cooperate and collaborate in the management of BENM. This shared stewardship includes the federal agencies' commitment to ensure that Tribal knowledge and other local expertise are reflected throughout all alternatives in the agency decision-making process for BENM, including through regular and project-specific communications.

In accordance with Presidential Proclamation 10285, if grazing permits or leases are voluntarily relinquished by the existing holders, the lands covered by such permits or leases would be retired from livestock grazing. Forage would not be reallocated for livestock grazing purposes unless the Secretaries specifically find that such reallocation would advance the purposes of the Monument designation.

Presidential Proclamation 10285 withdrew BENM from all forms of mineral entry and location. The lands previously available for mineral and energy activities under the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP are no longer available for such use, subject to valid existing rights. All management in the preliminary alternatives is subject to valid existing rights. This includes the rights of owners to access their existing private land inholdings as well as the rights of existing right-of-way (ROW) holders approved by the BLM or USDA Forest Service.

Finally, all alternatives would incorporate education and interpretation for the public regarding appropriate ways to recreate and engage in other activities while protecting BENM objects.

ES-4.2 Alternative A (No Action)

Alternative A, the No Action Alternative, represents existing management guided by management decisions in the 2020 ROD/MMPs, 2008 Monticello RMP, 2008 Moab RMP, and 1986 Manti-La Sal LRMP. Land use management direction in these plans guides BENM management to the extent that it is consistent with Proclamation 10285 and the protection of BENM objects. Where management direction in these plans is inconsistent with Proclamation 10285, the proclamation controls.

- **Recreation areas:** The BLM would continue to manage recreation with eight special recreation management areas (SRMAs) and two extensive recreation management areas (ERMAs). The SRMAs and ERMAs would provide for specific, outcomes-based recreational experiences. The USDA Forest Service would manage recreation on National Forest System (NFS) lands within BENM based on the Recreation Opportunity Spectrum (ROS) categories of primitive, semi-primitive non-motorized, semi-primitive motorized, and roaded natural.
- **Recreational shooting:** Recreational shooting would be allowed throughout BENM with the exception of campgrounds/developed recreation sites, rock writing sites, and structural

cultural sites. If problems with recreational shooting occur in the future, the BLM would consider future restrictions or closures.

- **Recreational facilities:** This alternative would continue to manage the existing recreational facilities. An implementation-level recreation management plan would be developed to provide additional site-specific management.
- **Livestock grazing:** BENM would be available/suitable for livestock grazing except for approximately 96,930 acres of BLM-administered lands, which would be unavailable or restricted to trailing only, and 43,309 acres of NFS lands, which would be designated as not suitable for grazing.
- **Areas of Critical Environmental Concern (ACECs):** Alternative A would continue to manage existing ACECs for their relevant and important values.
- **Vegetation management:** Alternative A would continue to manage vegetation to provide for high levels of vegetative diversity and productivity while continuing to prioritize commercial and private use of the Monument.
- **Forest and wood product harvest:** Alternative A would continue to limit private use of wood products to six designated areas rather than the entire BENM.
- **Fire management:** Under Alternative A, the current management of fuels would continue as per the existing land management plans and the USDA Forest Service's Spatial Fire Planning outlined in the Wildland Fire Decision Support System. Generally, Alternative A primarily relies on federal wildland fire land management decisions for wildfire and fuel management, with less emphasis on Tribal collaboration in these aspects. Alternative A would give priority to fuels treatments in the wildland-urban interface (WUI) and developed recreation areas. Additionally, there would be an emphasis on fuels treatments around cultural and natural resources.
- **Travel and transportation management:** Alternative A would continue to manage existing off-highway vehicle (OHV) area designations. Alternative A would continue to manage the existing network of non-motorized and non-mechanized trails per the 2008 Monticello RMP and the 2020 ROD/MMPs. For OHV use, 389,645 acres of BLM-administered lands and 46,430 acres of NFS lands would be managed as OHV closed areas, totaling 436,075 acres. OHV use would be limited on 685,403 acres of BLM-administered lands and 242,677 acres of NFS lands.
- **Lands with wilderness characteristics (LWC):** The BLM would continue to manage 48,954 acres of LWC for their wilderness characteristics.

ES-4.3 Alternative B

Alternative B would provide the most permissive management for those discretionary actions that are compatible with protecting BENM objects. This alternative would focus on on-site education and interpretation and allow for the development of facilities to protect BENM objects.

- **Recreation areas:** The BLM would manage recreation with four SRMAs and four ERMAs. The USDA Forest Service would manage recreation on NFS lands within BENM based on the ROS categories of primitive, semi-primitive non-motorized, semi-primitive motorized, and roaded natural.
- **Recreational shooting:** Recreational shooting would be allowed throughout BENM with the exception of the Indian Creek Corridor RMZ and San Juan River SRMA. Recreational shooting would also be prohibited in campgrounds, developed recreation facilities, climbing areas, existing and designated trails, parking areas, trailheads, across roadways, rock

writing sites, and structural cultural sites. If problems with recreational shooting occur in the future, the BLM would consider future restrictions or closures.

- **Recreational facilities:** Recreation facilities would be developed as necessary to support the recreation objectives in Recreation Management Areas (RMAs), protect resources, and provide for public health and safety.
- **Livestock grazing:** BENM would be available/suitable for livestock grazing except for approximately 169,530 acres, which would be unavailable/not suitable or restricted to trailing only.
- **ACECs:** The BLM would designate the Indian Creek ACEC, Lavender Mesa ACEC, and Valley of the Gods ACEC. The San Juan River ACEC and Shay Canyon ACEC would not be designated as ACECs.
- **Vegetation management:** Vegetation management under Alternative B places more emphasis on restoring historical vegetation conditions and fire return intervals and includes a reduction in some uses of vegetation resources such as timber harvest and grazing.
- **Forest and wood product harvest:** Alternative B would have approximately 930,910 acres open to wood product harvest (approximately 68% of the Monument).
- **Fire management:** Fire management under Alternative B would involve heightened environmental protection measures and place a greater emphasis on the protection of cultural resources. Additionally, it would prioritize increased Tribal collaboration during fire and fuels management. Alternative B would give precedence to fuels treatments in culturally significant sites and areas that have deviated from their Vegetation Condition Class (VCC). In these instances, Traditional Indigenous Knowledge would be integrated into fuels management.
- **Travel and transportation management:** Under Alternative B, public use of BENM for landings and takeoffs of motorized aircraft would be limited to Bluff Airport and Fry Canyon Airstrip, with the potential for additional locations to be identified in future implementation-level decisions. OHV use would be limited to 685,403 acres of BLM-administered lands and 112,122 acres of NFS lands, totaling 797,525 acres. OHV use would be managed as closed on 389,645 acres of BLM-administered lands and 176,982 acres of NFS lands, totaling 566,627 acres.
- **LWC:** The BLM would manage 97,403 acres of LWC to conserve their wilderness characteristics while allowing for compatible uses.

ES-4.4 Alternative C

Alternative C would allow discretionary actions only if necessary to protect BENM objects. This alternative would focus on off-site education and interpretation and allow for limited development of facilities to protect BENM objects.

- **Recreation areas:** The BLM would manage recreation with four SRMAs and four ERMAs. The USDA Forest Service would manage recreation on NFS lands within BENM based on the ROS categories of primitive, semi-primitive non-motorized, semi-primitive motorized, and roaded natural.
- **Recreational shooting:** Recreational shooting would be allowed throughout BENM with the exception of the Indian Creek SRMA and the San Juan River SRMA. Recreational shooting would also be prohibited in campgrounds, developed recreation facilities, climbing areas, existing and designated trails, parking areas, trailheads, across roadways, rock writing sites, and structural cultural sites. If problems with recreational shooting occur in the future, the BLM would consider future restrictions or closures.

- **Recreational facilities:** Recreation facilities would be developed or improved if needed to support the recreation objectives in RMAs, protect resources, and provide for public health and safety.
- **Livestock grazing:** BENM would be available/suitable for livestock grazing except for approximately 169,530 acres, which would be unavailable/not suitable or restricted to trailing only.
- **ACECs:** The BLM would designate the Indian Creek ACEC, Lavender Mesa ACEC, and Valley of the Gods ACEC. The San Juan River ACEC and Shay Canyon ACEC would not be designated as ACECs.
- **Vegetation management:** Under Alternative C, vegetation management would prioritize high value/high risk areas such as developed recreation facilities, and emphasis would be placed on treatments that maintain plant diversity, enhance native species productivity, and habitat connectivity.
- **Forest and wood product harvest:** Alternative C would have approximately 930,910 acres open to wood product harvest (approximately 68% of the Monument).
- **Fire management:** Fire management under Alternative C would also prioritize more environmental protection measures during fire and fuels treatments. Fuel reduction would target areas with motorized access, high visitation, and/or developed recreation facilities, but would also emphasize maintaining healthy VCCs, cultural resource protection, incorporation of Traditional Indigenous Knowledge, and Tribal collaboration.
- **Travel and transportation management:** Alternative C would eliminate most public access of BENM for unmanned aircraft systems (UASs), except for authorizations for case-by-case landings and takeoffs through formal permitting processes, where the use is beneficial to protecting BENM objects. Management of non-motorized and non-mechanized trails would be the same as under Alternative B. Under Alternative C, 487,048 acres of BLM-administered lands and 176,982 acres of NFS lands would be managed as OHV closed areas, totaling 664,030 acres. In all, 588,000 acres of BLM-administered lands and 112,122 acres of NFS lands would be managed as OHV limited areas, totaling 700,122 acres.
- **LWC:** The BLM would manage 97,403 acres of LWC to preserve their wilderness characteristics while allowing for compatible uses under Alternative C.

ES-4.5 Alternative D

Alternative D would generally prioritize the continuation of natural processes by limiting or discontinuing discretionary uses. This alternative would minimize human-created facilities and management would emphasize natural conditions.

- **Recreation areas:** The BLM would manage recreation with seven MAs. The USDA Forest Service would manage recreation on NFS lands within BENM based on the ROS categories of primitive, semi-primitive non-motorized, semi-primitive motorized, and roaded natural.
- **Recreational shooting:** Recreational shooting would be allowed throughout BENM with the exception of the Indian Creek SRMA, San Juan River SRMA, recommended wilderness, wilderness study areas (WSAs), and protected LWC. Recreational shooting would also be prohibited in campgrounds, developed recreation facilities, climbing areas, existing and designated trails, parking areas, trailheads, across roadways, rock writing sites, and structural cultural sites. If problems with recreational shooting occur in the future, the BLM would consider future restrictions or closures.

- **Recreational facilities:** This alternative would minimize the development of recreational facilities and management and would emphasize natural conditions.
- **Livestock grazing:** BENM would be available/suitable for livestock grazing except for approximately 410,367 acres, which would be unavailable/not suitable or restricted to trailing only.
- **ACECs:** The BLM would designate the Indian Creek ACEC, Lavender Mesa ACEC, Valley of the Gods ACEC, nominated John's Canyon Paleontological ACEC, and the Aquifer Protection ACEC. The San Juan River ACEC and Shay Canyon ACEC would not be carried forward.
- **Vegetation management:** Alternative D would utilize light-on-the-land treatments and natural processes throughout the entire Monument to enhance or maintain desirable conditions for vegetation for traditional uses and improving VCCs.
- **Forest and wood product harvest:** Alternative D would have approximately 930,910 acres open to wood product harvest (approximately 68% of the Monument).
- **Fire management:** Under Alternative D, numerous environmental protection measures would be employed to safeguard natural and cultural resources. Fire and fuel management would give precedence to natural processes and Traditional Indigenous Knowledge to achieve desired outcomes. The protection of culturally significant sites would be a primary focus. Mechanical treatments would solely be utilized to safeguard BENM objects.
- **Travel and transportation management:** Under Alternative D, access for motorized aircraft and non-motorized and non-mechanized trail users would be the same as those described under Alternative C. In all, 805,932 acres of BLM-administered lands and 176,982 acres of NFS lands would be managed as OHV closed areas, totaling 982,914 acres. A total of 269,117 acres of BLM-administered lands and 112,122 acres of NFS lands would be managed as OHV limited areas, totaling 381,239 acres.
- **LWC:** All lands in BENM that have been inventoried as having wilderness characteristics (approximately 419,128 acres) would be managed to conserve their wilderness characteristics while allowing for compatible uses.

ES-4.6 Alternative E

Alternative E maximizes the consideration and use of Tribal perspectives on managing the landscape of BENM. This alternative is meant to emphasize resource protection and the use of Traditional Indigenous Knowledge and perspectives on the stewardship of the Bears Ears landscape. This includes consideration of natural processes and seasonal cycles in the management of BENM and collaboration with Tribal Nations to incorporate those considerations into BENM day-to-day management.

- **Recreation areas:** Alternative E would manage recreation based on a zoned approach. Four zones would be designated: Front Country, Passage, Outback, and Remote.
- **Recreational shooting** would be prohibited in BENM.
- **Recreational facilities:** In general, development of facilities would be allowed in Front Country and Passage Zones and where necessary.
- **Livestock grazing:** BENM would be available/suitable for livestock grazing except for approximately 169,529 acres, which would be unavailable/not suitable or restricted to trailing only.
- **ACECs:** Under Alternative E, all existing ACECs would be carried forward. Additionally, the nominated John's Canyon Paleontological ACEC and Aquifer Protection ACEC would be designated.

- **Vegetation management:** Vegetation management under Alternative E would emphasize Traditional Indigenous Knowledge and techniques and natural processes to restore ecosystems, return natural fire intervals, vegetation conditions and landscape characteristics.
- **Forest and wood product harvest:** The agencies and the BEC would monitor populations and locations of traditionally harvested trees and their uses and impacts to vegetation and wildlife species. Wood product use would be opened or closed permanently or on a seasonal or multi-year basis to allow for resource rest. The acreages of areas open and closed to wood product harvest would be determined by the agencies in collaboration with the BEC. The selected acreages open to wood product harvest would determine the level of woodland resources open for harvest by Indigenous people and other members of the general public.
- **Fire management:** Under Alternative E, the most environmental protection measures would be employed to maximize protection of cultural resources, while also protecting natural resources. Fire and fuel management would prioritize natural processes and incorporate Traditional Indigenous Knowledge. The fuels treatments would give precedence to the protection of culturally significant sites. Mechanical treatments would only be used to protect BENM objects.
- **Travel and transportation management:** Under Alternative E, public use for landing and takeoffs of motorized aircraft would be limited to the Bluff Airport and Fry Canyon Airstrip. Alternative E would eliminate most public access of BENM for UASs, except for authorizations for case-by-case landings and takeoffs through formal permitting processes, where the use is beneficial to protecting BENM objects. 392,989 acres of BLM-administered lands and 176,982 acres of NFS lands would be managed as OHV closed areas, totaling 569,971 acres. In all, 682,059 acres of BLM-administered lands and 112,122 acres of NFS lands would be managed as OHV limited areas, totaling 794,181 acres.
- **LWC:** The BLM would manage 419,128 acres of LWC to conserve their wilderness characteristics while allowing for compatible uses under Alternative E.

Consistent with the BLM planning regulations (43 CFR 1610.4-7) and as part of the agencies' commitment to an open and transparent planning process, the agencies are identifying Alternative E as the preferred alternative at the draft RMP/EIS stage. For additional information regarding the selection of the preferred alternative, see Section 2.3.

ES-5 Environmental Consequences

ES-5.1 Natural Environment

ES-5.1.1 PALEONTOLOGICAL RESOURCES AND GEOLOGY

All alternatives would aim to protect paleontological resources in the Monument in collaboration with the BEC, and research, monitoring, and inventories of paleontological resources would be conducted in accordance with applicable laws, regulations, and policies. Collection of paleontological resources would only be allowed under Alternative A in areas managed under the 2008 Monticello RMP. Collection would be prohibited under all action alternatives unless such prohibition is inconsistent with the Religious Freedom Restoration Act or other applicable law. Under Alternative A, management and protection would focus on paleontological resources in Potential Fossil Yield Classification (PFYC) 4 and 5 areas, whereas the other alternatives would manage and protect paleontological resources in PFYC 3, 4, 5 and U areas. Alternative A contains

the most acreage in PFYC Classes 4 and 5 open to ROW authorization in recreation areas, and available/suitable to grazing, potentially allowing for damage to paleontological resources in these areas. Alternatives D and E would manage the most acreage as ACECs, Research Natural Areas (RNAs), wild and scenic rivers (WSRs), and WSAs, which would help protect paleontological resources from surface disturbance in these areas. Alternative E would provide the most protective management for paleontological resources, which would include pre-disturbance surveys for all discretionary actions that may impact paleontological resources as well requiring methods to separate the public from paleontological resources. Additionally, Alternative D would manage the least acreage in PFYC Classes 4 and 5 as available to grazing, reducing potential impacts to paleontological resources from grazing.

ES-5.1.2 SOILS AND BIOLOGICAL CRUSTS

Under Alternative A, management of soils would continue under current the 2020 ROD/MMPs and RMPs. While promoting sustainable soil functions and protecting highly sensitive soils, Alternative A would focus management actions on maintaining soil productivity for multiple uses. Current management plans do not necessarily require actions to maintain sensitive soils and soil crusts or restore areas with soil degradation. Areas with sensitive soils or degraded areas would continue to be at risk from erosion from authorized activities, resource uses, and natural disturbance(s). Additionally, existing management measures may not necessarily take into consideration current technology nor utilize current science for best management practices (BMPs) to address soil degradation and soil management. Agencies would collaborate with the BEC in identifying areas with biological soil crusts (BSCs) and classifying those crusts to best protect them.

Alternative B focuses on sustainable soil functions based on site-specific conditions and protecting sensitive soils and BSCs. Alternative B would allow for fewer soil-disturbing uses throughout the Monument especially in areas of sensitive soils or on steeper slopes, providing more protection for soils in these areas and reducing the chances of erosion.

Management of soil resources under Alternative C focuses on maintaining sustainable soil functions based on site-specific conditions and protecting sensitive soils and BSCs. No discretionary activities would be allowed on slopes greater than 35% and discretionary actions on slopes between 21 percent and 35 percent would require erosion control plans. These measures would help minimize the susceptibility of soils to wind and water erosion, and the loss of soil function associated with land uses.

Under Alternative D, management of soil resources would also focus on maintaining sustainable soil functions based on site-specific conditions and protecting sensitive soils and BSCs. Discretionary activities would be prohibited on slopes greater than 30%. If discretionary actions cannot be avoided on slopes between 21% and 30%, an erosion control plan would be required. These measures would contribute to minimizing the susceptibility of soils to wind and water erosion, and the loss of soil function associated with land uses.

Soil management goals under Alternative E would be to maintain or improve soil quality and long-term soil productivity using culturally led standards and to use collaboration with the BEC to benefit natural ecosystems and important relationships between water and soil. Alternative E focuses on ecosystem functioning and a return to natural states with regards to soil management and emphasizes the use of Traditional Indigenous Knowledge and peer-reviewed literature based on the best available Western science to protect soils and restore soil crusts.

ES-5.1.3 WATER RESOURCES

Under Alternative A, water resources would be managed under existing management plans. Agencies would manage riparian resources for proper functioning condition (PFC), limit disturbance within floodplains, and delineate riparian areas for project-specific impacts. Also under Alternative A, hydrologic study requirements for groundwater withdrawals would be determined at the implementation level. This is less protective against impacts to groundwater than Alternatives B and C which require hydrologic studies for any withdrawal within 0.25 mile and 0.5 mile, respectively. Alternative A is also less protective of groundwater withdrawal than Alternatives D and E because it allows new groundwater withdrawals. Alternatives D and E do not permit new groundwater withdrawals unless to protect BENM objects and/or Tribal Nations traditional uses.

Alternative A is less protective against impacts to water resources from soil erosion than Alternatives C and D because it allows surface-disturbing activities on slopes up to 40 percent, where Alternatives B, C, D, and E require an erosion control plan for surface-disturbing activities on slopes greater than 21 percent, Alternative C only allows surface-disturbing activities on slopes up to 35 percent, and Alternatives D and E only allows surface-disturbing activities on slopes up to 30 percent unless it is consistent with the protection of BENM objects.

Additionally, under Alternative A, more acres are open to livestock grazing than in Alternatives B, C, D, and E. Livestock grazing near waterways can affect other water quality parameters including increased nutrient levels, decreased oxygen levels, and increased stream temperatures, affecting aquatic habitats which may exceed state of Utah water quality standards by increasing *Escherichia coli* (*E. coli*) (and other harmful bacteria) concentrations in waterbodies, which can be a health concern because some water sources are used for drinking water in backcountry sites.

Alternatives D and E are generally most protective of surface water quality and public drinking water resources within BENM. Under Alternative D and E, approximately 66% and 58%, respectively, of the Planning Area is closed to OHV use, which would minimize accelerated erosion and ground disturbance, as well as streambank alteration from the use of OHVs on more acreage within the Planning Area. Additionally, under Alternatives D and E, agencies would manage discretionary uses to protect public Drinking Water Source Protection zones. This higher level of protection would improve protection of public drinking water sources relative to Alternative A which avoids or limits disturbance in public drinking source water protection zones.

Under all alternatives, goals of this RMP are to manage riparian and wetland resources for PFCs; manage water resources for quality and quantity, and protect and restore riparian, wetlands, and water resources, including springs and seeps. Collaborate with the BEC in the determination of appropriate restrictions or improvements to riparian, wetland, and water resources, as necessary to protect BENM objects.

Under all alternatives, agencies would conduct comprehensive monitoring to track water quality conditions across the Monument and would collaborate with the BEC to develop a groundwater/surface water technical study and monitoring plan, including, but not limited to, studies related to pumping impacts, water well production rates, water levels in water wells, and triggers for adaptive management, if needed, to protect BENM objects. Additionally, under all alternatives, agencies would conduct a groundwater study on the Cedar Mesa Sandstone and N aquifer to better understand characteristics, current conditions, recharge areas, recharge rates, groundwater budget (inflow vs. outflow), travel time, and springs.

Specific management actions to accomplish these goals vary by alternative; however, common to all alternatives is the management of water resources to maintain and enhance water quality and

quantity in efforts to protect BENM objectives and collaboration with the BEC. Riparian areas would be managed to provide for native and special status plant, fish, and wildlife habitats, and traditional, cultural, and ceremonial uses of water on BENM. Additionally, water resources under all alternatives would be managed to ensure stream channel morphology and functions are appropriate to the local soil type, climate, and landform and ensure ecological diversity, stability, and sustainability, including maintaining the desired mix of vegetation types and structural stages. All alternatives would seek collaboration with the BEC to restore and protect springs where riparian conditions are non-functioning and/or functioning-at-risk or water quality conditions are degraded from impacts using implementable protection measures and support traditional uses of springs/seeps and riparian areas on BENM for Tribal Nations, consistent with the protection of Monument objects.

ES-5.1.4 TERRESTRIAL HABITAT AND VEGETATION RESILIENCE AND CONSERVATION

Alternative A focuses on continuing existing land management practices and acreages for discretionary land allocations. Vegetation treatments would still occur under the individual and relevant RMPs. Vegetation would continue under current trends.

Under Alternative B, there would be more emphasis placed on restoring historical vegetation conditions and fire return intervals, as well as a focus on maintaining desired VCCs. There would be a reduction in some uses of vegetation resources, such as timber harvest and grazing, as well as collaboration with the BEC on identifying priority treatment areas, which would likely result in more management of culturally important species and communities, as well as more holistic, ecologically minded approaches to vegetation management than under Alternative A.

Vegetation management under Alternative C would be prioritized in high value/high-risk areas such as developed recreation facilities, and emphasis would be placed on treatments that maintain plant diversity, enhance native species productivity, and emphasize habitat connectivity. No chaining would be allowed in the Monument and treatments authorized in special designation areas would use “light on the land” methods. This reduction in allowable mechanical vegetation treatments would likely result in short-term improvements in vegetation due to the lack of surface-disturbance often associated with mechanical treatments.

Under Alternative D vegetation treatments would focus on enhancing or maintaining desirable conditions of vegetation for traditional uses as well as improving VCCs. Light-on-the-land treatments would be utilized throughout the Monument and Traditional Indigenous techniques and/or natural processes would be utilized for vegetation management. The prioritization of natural processes and reduction in mechanical vegetation treatment would likely reduce the number and scale of vegetation management projects.

Alternative E would emphasize Traditional Indigenous Knowledge and techniques and natural processes. The goals of vegetation management would be to restore ecosystems; return natural fire intervals, vegetation conditions, and landscape characteristics; and maintain access to the Monument without large amounts of human interference or impacts. Alternative E would account for seasonality and drought conditions when considering vegetation management which could reduce impacts to vegetation resources that are magnified during drought or certain parts of their life cycles.

ES-5.1.5 NOXIOUS WEEDS AND NONNATIVE INVASIVE PLANTS

Alternative A focuses on continuing existing land management practices and designating acreages for discretionary land allocations, and conditions and trends for noxious weeds and invasive species

would be expected to continue along similar trajectories. The increasing risk of uncharacteristic wildfire due to invasive annual grass cover and fine fuel loads would continue and lead to further invasions and reduced ecological resilience, particularly with increased droughts and warming conditions. Prevention measures, including the use of herbicides approved for use on BLM-administered lands, would be implemented for treating and preventing the spread of invasives.

Alternative B focuses on vegetation management to maintain plant diversity, native species productivity, and maintaining vegetation for Indigenous peoples' traditional and ceremonial uses. This focus on maintaining plant diversity and native species could help focus invasive and nonnative plant treatments in areas other than those that are high risk or high value. Invasive plant control would use a combination of Traditional Indigenous Knowledge and agency techniques which would allow for management options not typically considered by western management agencies and potentially allow for reduced invasive spread and establishment.

Vegetation management under Alternative C prioritizes maintaining plant diversity, native species productivity, and maintaining vegetation for traditional and ceremonial uses. The focus on plant diversity and native species resiliency could help focus invasive and nonnative plant treatments in areas other than those that are high risk or high value. Collaboration with the BEC to combat invasive species spread and establishment could allow for management options not typically considered by western management.

Alternative D prioritizes using light-on-the-land techniques throughout the Monument as well as using more Traditional Indigenous Knowledge and techniques and/or natural processes. This could result in fewer introductions of invasive plants due to reduced disturbance. However, the allowable vegetation treatment methods might result in a reduction in the number and scale of treatment projects, potentially causing a long-term decline in vegetation condition and an increase in the spread of invasive species if certain tools and techniques are not authorized to be used.

Under Alternative E, vegetation management would emphasize Traditional Indigenous Knowledge and techniques as well as natural processes and priorities would focus on restoring ecosystems and returning natural fire intervals and vegetation conditions. The preference for natural processes and nonmechanical treatment would likely result in short-term declines in the introduction and spread of noxious and invasive species. There would likely be a reduction in the number and scale of treatment projects, which could potentially cause a long-term increase in the spread of noxious and invasive species if certain tools and techniques are not authorized for use.

ES-5.1.6 FORESTRY AND WOODLANDS

Under all alternatives, the agencies would collaborate with BEC and Tribal Nations to incorporate Traditional Indigenous Knowledge to establish and implement forest health and forest management standards and guidelines and to assess conditions and guide management decisions for wood product harvest. Under all alternatives, all woodlands in BENM would be designated as lands not suited for timber production (i.e., growing, harvesting, and regenerating crops of trees for commercial use); however, timber management would be appropriate to provide for the protection of BENM objects. Where possible, agencies would prioritize making fuelwood and forestry products resulting from fuels and vegetation projects available to Indigenous people and other members of the public. All wood product harvest would require an appropriate authorization. Authorizations would continue to be issued to the public consistent with the availability of wood products and the protection of other resource values.

Alternative A would continue to allow approximately 52% of the Monument to be open for wood product harvest. Alternatives B, C, and D would open approximately 68% of the Monument to wood product harvest.

Alternative B would provide the largest area of woodlands that are both open to harvest and managed as OHV limited. This is noteworthy because off-road OHV travel facilitates wood gathering, and impacts can include erosion and damage to soil and vegetation. For this reason, Alternative B would likely have more wood products harvested than areas that are closed to OHV use due to the relative ease of access.

Alternative C would provide a smaller area open to harvest and managed as OHV limited than under Alternative B. Alternative D would provide the smallest area open to harvest and managed as OHV limited, which would most reduce the risk of wood product harvest or damage from off-road OHV use in woodlands.

Alternative E is the alternative that most emphasizes and implements collaboration with the BEC and Tribal Nations. Under Alternative E, no areas are designated as open or closed to wood product harvest at this time. Rather, if Alternative E is selected, the acreages open and closed to wood product harvest would be determined by the agencies in collaboration with the BEC, and the selected acreages open to wood product harvest would determine the level of woodland resources open for harvest.

ES-5.1.7 LANDS WITH WILDERNESS CHARACTERISTICS

Approximately 419,128 acres have been found to possess wilderness characteristics in the Decision Area. Alternative A would continue to manage 48,954 acres of LWC for the protection of their wilderness characteristics. Compared with Alternative A, Alternatives B and C would manage 97,403 acres of LWC for the protection of their wilderness characteristics while allowing for compatible uses. Alternatives D and E would manage 419,128 acres of LWC for the protection of their wilderness characteristics while providing for compatible uses. Alternatives D and E would provide the most protection for LWC because there would be the greatest acreage of LWC that would be managed to protect these values compared with the other alternatives. Across all alternatives, LWC would be managed in accordance with applicable BLM policy.

ES-5.1.8 WILDERNESS STUDY AREAS

Under all alternatives, there are no designated wilderness areas on BLM-administered lands and no proposed changes to existing WSAs; however, Alternatives B, C, and D would provide the highest level of protection for WSAs, including related wilderness characteristics that have significance to Indigenous peoples. This is because if Congress releases any WSAs within BENM, whether in whole or in part, the agencies would continue to manage the subject lands to preserve their wilderness characteristics until re-inventories of wilderness attributes occur. If the lands in question are determined to have wilderness characteristics during a re-inventory, in collaboration with the BEC, they would be managed to protect those characteristics unless inconsistent with applicable law. No new proposals or actions would occur within WSA units until the BLM completes the wilderness characteristics inventory unless those proposals or actions are essential for protection of BENM objects. In comparison, Alternatives A and E would not require re-inventory of wilderness characteristics and the BLM would only conduct a land use plan amendment of the MMP, with accompanying NEPA analysis, to determine how those lands would be managed. Alternatives D and E would provide additional protection of wilderness character by prohibiting recreational shooting in all WSAs, although lawful firearm use for hunting would still be permissible. Across all

alternatives, WSAs would continue to be managed in accordance with BLM Manual 6330 and as Visual Resource Management (VRM) Class I, closed to OHV use, and ROW exclusion areas.

ES-5.1.9 WILD AND SCENIC RIVERS

Under all alternatives, WSR segments would remain suitable and free-flowing, and their mileage, outstandingly remarkable values (ORVs), and tentative classifications would remain the same as described in the 2008 Monticello RMP. Alternative A would continue to manage suitable segments as VRM Class I or II, ROW avoidance or exclusion, and closed to OHV use, based on tentative classifications. Alternatives B, C, D, and E would provide more protections to WSR segments than Alternative A by changing the segments to VRM Class I, changing to ROW exclusion, and, for Alternatives B and E, prohibiting motorized boat use within one of the segments. Alternative D prescriptions be identical to Alternative C. Alternative E prescriptions would be identical to Alternative B.

Effects on WSR segments from activities outside the WSR corridors could occur from other uses of these lands. Under Alternative A, lands surrounding the WSR segments are available for grazing, limited to designated routes and trails, and open for ROWs; these uses have the potential to affect water quality and ORVs. These effects would be similar under Alternatives B and C but likely would decrease for three of the segments under Alternatives D and E. Designating 74% of BENM as an Aquifer Protection ACEC under Alternative D and 6% of BENM as an Aquifer Protection ACEC under Alternative E would further protect the WSR segments by managing discretionary uses to avoid adversely impacting vegetation communities and groundwater-dependent ecosystems over most of BENM and thus protect groundwater recharge, water quality, and water quantity of the aquifers and aquifers systems more than under the other alternatives. This would indirectly benefit the free-flowing condition, identified tentative classification, water quality, and ORVs, particularly for the three WSR segments that would be adjacent to this ACEC.

ES-5.1.10 AREAS OF CRITICAL ENVIRONMENTAL CONCERN AND RESEARCH NATURAL AREAS

The designation and management of ACECs for their relevant and important values would also serve to protect Monument objects. Management actions and impacts to ACECs would vary by designated unit and identified values. Management actions may include closure to or limitations on OHV uses, collection of woodland products, limitations on use if resource damage is observed, and making the areas unavailable/not suitable to livestock grazing or trailing. All of these actions could help protect relevant and important values for ACECs. Under all action alternatives, some ACECs whose relevant and important values include scenic qualities (e.g., Indian Creek ACEC and Valley of the Gods ACEC) would be managed as ROW exclusion areas; San Juan River ACEC would be managed as ROW exclusion under Alternative E. Such management would prevent new linear infrastructure or development from impacting viewsheds across these landscapes and thereby help to maintain the relevant and important values for which the ACECs were designated.

Alternatives D and E would provide the most protections of identified ACEC values on BENM by managing approximately 1,000,000 acres of ACECs under Alternative D and 126,000 acres under Alternative E. Alternative E would designate seven ACECs (two new ACECs in addition to the five existing ACECs designated under Alternative A), the most of any alternative. ACEC designations would serve to protect the relevant and important values of each ACEC and would contribute to the protection of BENM objects throughout the majority of the Monument. The protection of the extensive relevant and important values under Alternatives D and E may result in more prescriptive management to protect those values in certain areas. Alternatives B and C would both designate the same three ACECs (in total, approximately 27,000 acres).

Specific management actions for Cliff Dwellers Pasture RNA, the sole RNA on BENM, can be found in the 1986 Manti-La Sal LRMP and would remain consistent under all alternatives. The Cliff Dwellers Pasture RNA would be managed as a protective emphasis unit with unmodified internal conditions that can be compared to manipulated conditions outside the RNA. Prohibitions on resources uses in the RNA would prevent impacts like erosion, forage consumption, surface disturbance, and the spread of noxious and invasive weeds from changing the internal conditions necessary to the RNA.

ES-5.1.11 WILDLIFE AND FISHERIES

Many goals, objectives, and management directions for wildlife and fish would remain the same or be similar under all alternatives. These directives provide protection for fisheries, wildlife and habitats while allowing for other discretionary uses. Management direction for all alternatives would include limiting discretionary uses to protect and recover special status species' habitats and populations including BLM and USDA Forest Service sensitive species, Utah species of greatest conservation need, and federally threatened, endangered, proposed, or candidate species.

Alternative A would allow for maximum discretionary uses and emphasize management flexibility. Under Alternative A, current trends pertaining to wildlife and habitat, including special status species, would likely continue. Alternative B would emphasize flexibility in planning-level direction to maximize the potential for an array of discretionary actions that would be compatible with the protection of BENM objects and resources. Although protection of these objects includes wildlife and habitat, the allowance of many discretionary actions under Alternatives A and B would likely result in impacts on wildlife and fisheries (such as habitat loss, fragmentation, and reduced individual fitness) and their habitat that would be similar between these two alternatives.

Under Alternative C, an emphasis on indirect and prescriptive management to protect BENM objects, including implementation of additional controls (such as an increased emphasis on permits) and allowance of discretionary uses only as needed for protection of Monument objects, would result in increased protection of riparian and aquatic wildlife and habitats when compared to Alternatives A and B.

Alternative D would maximize natural processes by limiting discretionary uses. This alternative would also constrain management actions to emphasize natural conditions, such as passive vegetation management. Alternative D would protect more wildlife and habitat through land use allocations and therefore reduce impacts on wildlife and habitat as compared with Alternative A; however, by emphasizing natural processes as opposed to active management, this alternative would also limit some management actions or extend the period of time it would take to achieve desirable conditions that could improve wildlife habitat.

Alternative E would prioritize a wholistic land management approach that provides equity to the Traditional Indigenous Knowledge of the Bears Ears landscape. The alternative would take a more active approach to maintaining, restoring, and/or improving critical habitat requirements for native fish and general habitat for terrestrial wildlife. These actions would likely improve wildlife habitat, relative to Alternative A.

ES-5.1.12 VISUAL RESOURCES

Alternative A would continue to manage large portions of BENM under VRM Class I and II where management activities would preserve or retain the natural landscape character and not attract the attention of casual viewers. Under Alternative A, the BLM would continue to manage portions of landscapes inventoried as having high scenic quality under VRM Class III and IV where

management activities could moderately alter (VRM Class III) or dominate (VRM Class IV) the characteristic landscape. The USDA Forest Service would continue to manage portions of BENM, including the Dark Canyon Wilderness, under a Preservation Visual Quality Objective (VQO) where most management activities are prohibited. Under Alternative A, the USDA Forest Service would continue to manage portions of high quality or highly intact landscapes under a Modification VQO where management activities could dominate the characteristic landscape, but these activities must remain compatible with the natural surroundings.

Alternatives B, C, D, and E would not manage any BENM lands with VRM Class IV, which allows for major modification of the characteristic landscape. Under Alternatives B, C, and D, the BLM would manage portions of landscapes inventoried as having high scenic quality under VRM Class III, where management activities could moderately alter the characteristic landscape. Alternative E would only assign VRM Class I or II to BENM lands, resulting in these landscapes retaining their landscape character.

Specifically, under Alternatives A and B, 38% of BENM lands would be managed as VRM Class I, meaning that only negligible and natural process changes to landscape would be allowed; under Alternative C, that acreage would increase to 47%, and under Alternative D, acreage would increase to 75%. Under Alternative E, the BLM would manage all lands as VRM Class I or II, with almost 98% managed as VRM Class I. Under Alternative A, 28% of BLM-administered lands would be managed as VRM Class II, which allows only minor changes in the landscape character such that the attention of the casual observer is not attracted. Under Alternative B, 60% of BLM-administered lands would be managed as VRM Class II; under Alternative C, 51% would be managed as VRM Class II; and under Alternative D, 25% would be managed as VRM Class II. Alternative A would allow for the most acres to be managed as VRM Class III (20%), where projects could modify the landscape character such that changes could attract the attention of the casual observer, whereas Alternative E would not allow any lands to be managed to these objectives. Alternatives B and C would allow for less than 2%, and Alternative D less than 1%, of BENM to be managed under VRM Class III. Only Alternative A allows for any lands within BENM to be managed for objectives that allow major modification of the landscape character (VRM Class IV).

The USDA Forest Service, under Alternatives B, C, and D, would manage 9 acres under the less restrictive Moderate Scenic Integrity Objective (SIO), where deviations must remain visually subordinate to the existing scenic character, but they may attract attention and be evident. Under Alternative E, the USDA Forest Service would not manage any lands under less restrictive SIOs with all lands managed under more restrictive SIOs, Very High or High SIO.

Specifically, under Alternatives B, C, and D, the USDA Forest Service would manage approximately 16% of BENM under a Very High SIO, where only subtle deviations are allowed to protect the area's wilderness values, and approximately 84% under a High SIO, where the valued scenic character must appear intact and deviations must not be evident. Under Alternative E, all NFS lands in BENM would be managed under a Very High or High SIO with over 99% managed under a Very High SIO.

VRM Class I and II, for the BLM, and Preservation VQO/Very High SIO and Retention VQO/High SIO, for the USDA Forest Service, are the more protective of scenic values. Comparing alternatives, Alternative E is the most protective because it manages the entire Monument under these more protective visual management objectives. The level of protection lessens across alternatives from D to C to B, with Alternative A being the least protective of scenic values with 20% of the BLM-administered portion of BENM managed as VRM Class III and 13% VRM Class IV, as well as 44% of the USDA Forest Service portion of BENM managed as a Modification VQO.

ES-5.1.13 NATURAL SOUNDSCAPES

Under Alternative A, the application of BMPs outlined in the 2020 ROD/MMPs would continue with no specific areas identified where drone takeoffs and landings would be prohibited and no further limitations on where OHV use could occur. Under all alternatives, impacts on soundscapes from scenic overflights, drones in flight, and travel along highway corridors would continue to affect BENM soundscapes. Existing soundscapes would be more protected under Alternatives B, C, D, and E than under Alternative A as the BMPs designed to protect natural soundscapes would be applied to the entire BENM instead of being limited to the smaller 2020 Planning Area. Alternatives B, C, D, and E include additional areas closed to OHV use, compared with Alternative A, with Alternative D protecting the largest portion of BENM from potential noise associated with OHV use.

Alternative B would limit drone takeoffs and landings to routes designated in a manner that allows for such use in a travel management plan (TMP), to focus use where other human-generated noise would occur, while prohibiting takeoffs and landings within 300 feet of developed recreation facilities to protect these areas from increased noise associated with drone use. Under Alternatives C, D, and E, public drone takeoffs and landings would only be allowed if permitted through formal authorization and only when it would be beneficial to protecting BENM objects, resulting in further protection of BENM soundscapes compared to Alternatives A and B.

Two airstrips would continue to be open for landing or takeoff of aircraft under Alternative A, but no new backcountry airstrips can be designated under this alternative without implementation-level planning. Under Alternatives B, C, D, and E, additional landings and takeoffs at backcountry airstrips, beyond the two identified under Alternative A, could be allowed through a formal authorization process, only if the use is beneficial to BENM objects, potentially resulting in increased impacts to soundscapes adjacent to these existing but undesignated airstrips.

A soundscape management plan would be developed under Alternatives B, C, D, and E to identifying methods to mitigate effects associated with trends and specific effects on soundscapes in BENM, including inventorying and monitoring soundscapes in collaboration with the BEC. All alternatives would include collaboration with the BEC informed by Traditional Indigenous Knowledge. Under Alternative E, the BLM and USDA Forest Service would collaborate further with BEC to survey existing impacts to soundscapes and identify those that damage or degrade culturally affiliated Tribes' cultural practices requiring quiet. Based on this additional level of collaboration with BEC, impacts on soundscapes, potentially affecting traditional indigenous practices, would be reduced where identified by BEC under this alternative compared to Alternatives A, B, C, and D.

Overall, Alternative D would be the most protective of natural soundscapes, followed by Alternative C, Alternative E, Alternative B, and Alternative A.

ES-5.1.14 AIR QUALITY

Impacts to air quality include fugitive dust generation (e.g., from vehicular travel on unpaved roads and exposure and degradation of soils) and pollutant emissions (e.g., tailpipe exhaust and smoke from wildland fires). Under the alternatives, the primary source of particulate matter emissions in the Planning Area would be from recreation and travel management, followed by wildland and prescribed fires.

Localized impacts from particulate matter emissions from travel management and recreation would continue along designated unpaved roads under all alternatives. Alternative D, with 74% of the Planning Area closed to OHV travel, would result in reduced emissions within an area larger by

42% compared with Alternative A. Under Alternative C, localized impacts from particulate matter emissions would be reduced within 17% more acres than Alternative A, whereas under Alternatives B and E, localized impacts from particulate matter emissions would be reduced within 10% more acres compared with Alternative A. Area closures to OHV travel could result in activity relocation within the Planning Area and result in displaced emissions along designated routes elsewhere in the Planning Area.

Common to all the alternatives, increasing recreation and visitation, as well as increasing level of OHV use, would continue to impact air quality according to the level of demand. Alternatives A and B would result in the highest levels of emissions from maintenance and development of recreational sites; however, emissions would be temporary and concentrated. Targeted recreation under Alternative B would improve air quality in more remote areas in the Planning Area by focusing use and emissions near more developed locations.

Under Alternative D, a reduction in animal unit months (AUMs) and head months (HMs) would result in 12% less emissions from range improvement projects compared with Alternative A. Under Alternatives D and E, impacts from management actions for vegetation management and prescribed fires would use a landscape-wide approach for restoring natural fire, which would have indirect, long-term effects to the extent that it creates more resilient vegetation communities that are less prone to wildfire. In the short term, however, it could lead to a greater prevalence of wildfire, which could impact air quality.

ES-5.1.15 NIGHT SKIES

Based on the release of BLM Technical Memorandum 457 (Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Lands), strategies to reduce light pollution would be applied for all alternatives during planning and design of projects (or other management actions) located on BLM-administered lands, resulting in protection of BENM dark night skies. All alternatives include collaboration with the BEC informed by Traditional Indigenous Knowledge. Under Alternative A, management of dark night skies would continue with BMPs associated with BLM Technical Memorandum 457, in addition to those outlined in the 2020 ROD/MMPs, thus minimizing impacts to the extent practicable including the prohibition of permanent lighting in BLM VRM Class I areas within the 2020 Planning Area. Under Alternatives B, C, D, and E, the BLM and USDA Forest Service would prohibit permanent lighting in BLM VRM Classes I and II as well as USDA Forest Service Very High and High SIO areas. This would result in the protection of night skies over a large portion of BENM, beyond the areas protected under Alternative A, with these alternatives protecting dark night skies across more than 98% of BENM with Alternative E protecting 100% of BENM's dark night skies. Additionally, Alternatives B, C, D, and E would inventory and monitor dark night resources, culminating in a night skies management plan to mitigate effects from BENM uses, which is not included under Alternative A. Under Alternative E, the BLM and USDA Forest Service would coordinate further with the BEC to survey existing impacts to night skies and identify those that damage or degrade culturally affiliated Tribes' cultural practices requiring darkness. Additionally, under Alternative E, the BLM and USDA Forest Service would promote night sky resources with the goal of the program to meet or exceed the standards for accreditation as an International Dark-Sky Association International Dark Sky Place. Alternative E would be the most protective of dark night skies, followed by Alternative D, Alternative C, Alternative B, and then Alternative A.

ES-5.2 Built Environment

ES-5.2.1 CULTURAL RESOURCES, INDIGENOUS PEOPLES' RELIGIOUS CONCERNS, AND TRIBAL USE

Recreation is expected to increase generally within BENM. Accordingly, activities associated with increased visitation are anticipated to impact important cultural resources, including the cultural landscape and traditional uses, simply by bringing more visitors to these locations. Increased visitation of culturally significant landscapes for use by non-Indigenous people could interfere with specific religious ceremonies or with specific Indigenous peoples' landscape use activities. Travel and transportation within the Monument would also continue under all alternatives. Travel and transportation would, however, be actively managed to provide safe and reasonable access while protecting BENM objects.

Alternative A maintains current management of cultural resources, Indigenous peoples' religious concerns, and Tribal use as described by the current 2020 ROD/MMPs and current RMPs. Significantly, under all action alternatives, management of the Monument and decisions regarding Monument use are made with direct involvement of the BEC along with the BLM and USDA Forest Service. Across all alternatives, areas subject to more active recreation management would minimize impacts to cultural resources by providing opportunities to apply timing and visitation restrictions that would limit incompatible use with cultural resources. OHV use of the Monument under Alternatives B, C, D, and E is addressed primarily by designating areas as closed or limited to OHV use. Cultural resources are sensitive to incompatible uses when they can be easily accessed. Accordingly, alternatives that minimize OHV access would minimize those potential impacts. Each of the action alternatives provides for varying areas of OHV restrictions. Greater numbers of acres that are closed to OHV use would provide greater protection of cultural resources than would smaller areas. Grazing can impact cultural resources through surface trampling, livestock wallowing, and establishment of livestock trails through important locations. In general, where grazing is designated as available/suitable, there is greater potential impact to such sites than in areas where grazing activity is limited or prohibited. Alternative D provides for the greatest number of acres unavailable/not suitable for grazing. Finally, ROW grants are expected to continue within the Monument under all alternatives. Although a ROW grant itself does not necessarily result in impacts to important cultural resources, the activity for which the grant is issued may.

ES-5.2.2 ARCHAEOLOGICAL SITES

Recreation and tourism are expected to increase regionally and to accordingly increase within BENM. Such increases in visitation could bring increased OHV use and associated access to more and more remote archaeological sites. Additional visitation to these more remote locations could have associated impacts (e.g., vandalism, looting, and accidental damage) to these sites. Travel and transportation within the Monument would continue under all alternatives but would be actively managed to provide safe and reasonable access while protecting BENM objects. Under all alternatives, new and ongoing vehicular use in areas where use is currently limited would impact archaeological resources by providing greater access to those resources. However, new and ongoing vehicular use would be managed to ensure the travel network supports education and protection of BENM objects by siting roads and trails in locations which allow the public to better understand the cultural landscape without impacting objects. Moreover, under all alternatives, no cross-country OHV use is allowed.

Alternative A maintains current management of archaeological sites as described by the current ROD/MMPs and RMPs. Importantly, under Alternatives B, C, D, and E, management of the Monument and decisions regarding Monument use are made through collaboration among the

BLM, USDA Forest Service, and BEC. Under each action alternative, designated recreation areas or zones would affect the allowable recreation activities and thus limit the potential for impacts. All such implementation-level recreation management actions would be developed in coordination with the BEC. Each action alternative designates certain areas as OHV closed or OHV limited. The specific areas and acreages of each vary between alternatives. Archaeological sites are sensitive to impacts when they can be easily accessed. Accordingly, alternatives that minimize OHV access would minimize those potential impacts. Each of the action alternatives provide for varying areas of OHV restrictions. Alternatives that have greater numbers of documented archaeological sites in OHV closed areas would provide greater protection of archaeological sites than would alternatives with fewer sites in OHV closed areas. Under Alternative D, there are more documented archaeological sites in OHV closed areas than under any other alternative. Grazing can impact archaeological sites through surface trampling, livestock wallowing, and establishment of livestock trails through sites. In general, where lands are designated as available/suitable for grazing, there is greater potential impact to archaeological sites than in areas where grazing activity is limited or prohibited. The greatest number of archaeological sites in areas designated as unavailable/not suitable for grazing is found under Alternative D. Wood product harvest can impact archaeological sites by providing for increased use and access to areas that may contain documented or unknown sites. There are more documented archaeological sites in areas closed to wood product harvest under Alternative A. Finally, ROW grants are expected to continue within the Monument under all alternatives. Although a ROW grant itself does not necessarily result in impacts to archaeological resources, the activity for which the grant is issued may.

ES-5.2.3 HISTORIC COMMUNITIES, HISTORIC RESOURCES

Recreation is expected to increase regionally and within BENM. Accordingly, activities associated with increased visitation are anticipated to impact historic period communities and resources simply by bringing more visitors to these locations. Travel and transportation within the Monument would also continue under all alternatives providing easier access to historic resources. Travel and transportation would, however, be actively managed to provide safe and reasonable access while protecting BENM objects.

Alternative A maintains current management of cultural resources, Indigenous peoples' religious concerns, and Tribal use as described by the current 2020 ROD/MMPs and current RMPs. Significantly, under all action alternatives, management of the Monument and decisions regarding Monument use are made through collaboration among the BLM, USDA Forest Service, and BEC. Under each action alternative, designated recreation areas or zones would affect the allowable recreation activities and thus limit the potential for impacts. Alternatives B, C, D, and E each designate recreation management areas by one or more of several management actions. SRMAs, ERMAs, RMZs, recreation setting characteristics areas, or recreation zones and the specific areas and acreages of these designations vary between alternatives. In general, those areas that are subject to more active recreation management would minimize impacts to historic resources by providing opportunities to apply timing and visitation restrictions that would limit incompatible use with those resources. Similar to archaeological sites, historic resources are sensitive to impacts when they can be easily accessed. Accordingly, alternatives that minimize OHV access would minimize those potential impacts. Each of the action alternatives provide varying areas of OHV restrictions. Alternatives with greater numbers of documented post-contact historic sites in OHV closed areas would provide greater protection of those sites than would alternatives with fewer sites in OHV closed areas. There are more documented post-contact historic resources under Alternative D in OHV closed areas than under any other alternative. Grazing can impact post-contact historic sites through surface trampling, livestock wallowing, and establishment of livestock trails through sites. In general, where grazing is designated as available/suitable, there is greater potential impact to such sites than in areas where grazing activity is limited or prohibited.

The greatest number of documented post-contact historic sites in areas designated as unavailable/not suitable for grazing are found under Alternative D. Wood product harvest can impact archaeological sites in ways very similar to OHV use by simply providing for increased use and access to areas that may contain documented or unknown sites. There are more documented post-contact historic sites in areas closed to wood product harvest under Alternative A. Finally, ROW grants are expected to continue within the Monument under all alternatives. Although a ROW grant itself does not necessarily result in impacts to post-contact historic resources, the activity for which the grant is issued may.

ES-5.2.4 FUELS, WILDFIRE, AND PRESCRIBED FIRE

Under all alternatives, firefighter and public safety remain the top priorities for fire management in BENM. Collaboration with the BEC, partners, and affected groups is pursued to reduce wildfire risks to communities, property, and recreation areas while preserving ecosystems. Key considerations include maintaining healthy ecosystems, protecting important watersheds and habitats, and safeguarding cultural resources. Traditional Indigenous Knowledge and techniques are incorporated into wildfire protection and fuels management projects to enhance the preservation and resilience of cultural and natural resources.

Alternative A maintains the current approach with federal wildland fire land management decisions as described under the current 2020 ROD/MMPs and current RMPs, while placing less emphasis on Tribal input compared to all other Alternatives. Alternative A offers options for improving ecosystem function and returning fire regimes to historic conditions but is less likely to be effective than all other Alternatives at accomplishing these goals. Alternative A allows more intrusive fire management strategies that may pose risks to cultural resources but emphasizes protection of human health and safety. Alternative B focuses more on ecosystem health and restoring fire regimes through collaboration with the BEC and Tribal Nations compared to Alternative A. Alternative B provides greater options for returning fire regimes to historic conditions and emphasizes the protection of cultural resources more than Alternative A; however, Alternative B places less emphasis on treatments in the WUI and recreational sites, which could increase fire risks for surrounding communities. Fire management under Alternative C has a similar impact on ecosystem health and fire regimes as Alternative B, but with more restrictive management options. Alternative C utilizes the same fire and fuels management approach for protecting cultural resources but places greater emphasis on fuel and vegetation treatments in areas with motorized access, high visitation, and developed recreation facilities to reduce fire risk. This approach balances natural and cultural resource protection with health and human safety when compared to the other Alternatives. Alternative D is similar to Alternative C in terms of impacts to ecosystem health and fire regimes, as well as cultural resource protection. Similar to Alternative B, Alternative D also places less emphasis on treatments in the WUI and recreational sites, potentially increasing fire risks for communities. Alternative E involves more stringent environmental protection and increased coordination with the BEC and Tribal Nations for all fire and fuels management activities compared to Alternatives A, B, C, and D. Alternative E offers similar fire management options as Alternative D but with greater restrictions meant to protect cultural resources. Overall, Alternative E provides the highest level of protection for cultural resources. Like Alternatives B and D, it places less emphasis on treatments in the WUI and recreational sites, which could increase fire risks for communities.

ES-5.2.5 ENVIRONMENTAL JUSTICE AND SOCIAL AND ECONOMIC VALUES

ES-5.2.5.1 Economic Contributions

Under all alternatives, BENM would continue to support the local and regional economy through increased jobs, wages, economic output, nonmarket values, and ecosystem services from its uses, such as recreational opportunities and grazing and ranching allotments.

Alternatives A, B, C, and E would likely provide more economic value from grazing through more jobs, labor income, and net economic output than Alternative D, due to the larger number of actual AUMs. The economic contributions from recreation depends on the number of visitors and the type of visitors. Alternative B would likely support more recreation visitors, especially those who stay overnight on BENM. Alternative C would support improvements to facilities and amenities in high use areas, which would likely increase the numbers of visitors to these areas, but impacts to economic contributions from recreation would likely be similar to Alternative A. Alternatives D and E are the most restrictive alternatives on recreation, especially with respect to dispersed camping and areas closed to OHV travel; this could lead to a decrease in overall visitors to BENM, which could decrease the economic contributions from recreation. On the other hand, under Alternatives D and E, there could be an increase in recreational expenditures if more recreators stay off-site, which might increase recreation-related economic contributions.

ES-5.2.5.2 Social Conditions

Under Alternatives D and E, the BLM and USDA Forest Service would protect the most LWC and would place the most restrictions on other uses that would not contribute to the protection of the lands, compared with the other alternatives. This would mean the BLM and USDA Forest Service management decisions under Alternatives D and E would most likely provide more nonmarket value associated with open spaces (such as quality-of-life values), but less nonmarket values associated with recreation and grazing (such as mental and physical health and sense of place) than the other alternatives. Under Alternatives D and E, there would likely be more nonmarket values associated with traditional, cultural, and spiritual uses of BENM land and natural resources, including soundscapes, scenic and visual resources, higher water and air quality, and wildlife. Under Alternative A, there would be the smallest amount of protected LWC and this would likely provide fewer nonmarket values associated with open spaces, but might provide more nonmarket values associated with recreation and grazing than Alternative D.

Under Alternatives D and E, management decisions would provide increased access to cultural values to Tribes and increased access to valued resources to communities of interest that value protection and preservation of habitats and resources, compared with Alternative A; however, under Alternative D, there would likely be an impact to the culture and way of life surrounding livestock grazing, which could impact local farmers and ranchers and their families.

ES-5.2.5.3 Environmental Justice

Environmental justice communities were identified in the analysis area, so further analysis was conducted to identify adverse impacts that could disproportionately affect these communities. Under all alternatives, there could be adverse impacts that would affect environmental justice communities. These impacts include impacts to water quality, traditional cultural use of plants, animals, and minerals, travel and transportation, and economic contributions; however, the degree to which these impacts disproportionately affect environmental justice communities often depends on the site-specific activities that cause the impacts, and the mitigation measures that the BLM and USDA Forest Service take can reduce the impacts overall.

Under all alternatives, the BLM and USDA Forest Service's management decisions could impact environmental justice communities who rely on wood product harvesting for heating sources or other uses. Under Alternative A, access for noncommercial timber harvesting is the most limited, and this could disproportionately impact environmental justice communities by restricting access to products. These communities of concern who use wood products for heating sources would likely need to find other sources for heating in the winter. Firewood users would be required to pay higher prices for alternative fuels or for fuelwood procured resulting in high social health costs; however, reducing use of wood for heating sources could improve air quality for the surrounding communities, including environmental justice populations, especially during the winter months due to inversion conditions. Impacts to emissions from burning wood would likely occur in the analysis area, but outside of the Planning Area. Reduced harvest, under Alternative A, could also result in reduced disruption to cultural resources from foot or vehicle traffic. These impacts would be site specific and would depend on the location and concentration of the wood burning. See Section 3.4.14. for more information on air quality impacts from wood burning. Under Alternatives B, C, D, and E, access for authorized private wood product harvest is allowed on LWC if the harvest provides benefits to wilderness characteristics and meets VRM Class II objectives, for Alternative B, and VRM Class I objectives for Alternatives C, D, and E. This management decision provides flexibility regarding locations of wood product harvest, which could benefit all communities. Under all alternatives, the BLM and USDA Forest Service would continue to coordinate and consult with Tribes with ties to BENM. Also, the BLM and USDA Forest Service would implement mitigation measures that would reduce impacts to Tribal communities, such as impacts to timber and wood cutting resources, subsistence resources, and cultural and spiritual resources.

ES-5.2.6 LANDS AND REALTY

All alternatives would impact land use authorization and land tenure within BENM. However, each alternative varies in degree of restriction in relation to land use authorization and land tenure. Under all alternatives, land use authorization and land tenure adjustments would continue. ROWs would be allowed within designated ROW avoidance areas, but the BLM would only retain existing utility corridors and not allow new designated corridors. Land tenure adjustments would occur in the form of acquisition and exchange under all alternatives. All current communication sites would continue to exist, and new communication sites would be allowed in ROW avoidance areas. Film permits would continue to be issued under all alternatives, with varying degrees of restrictions.

Alternative A is the least restrictive in terms of ROW authorization, as most of the Planning Area would be designated as open to ROW authorization or ROW avoidance, with the exception of WSAs and wilderness areas, which are exclusion areas under Alternative A. New applications for ROWs would be authorized with or without restriction, depending on the ROW location.

Similar to Alternative A, Alternative B would allow for ROW authorization in ROW open and avoidance areas; however, most land would be allocated as ROW avoidance or exclusion areas. Therefore, new ROW applications would likely occur within the ROW avoidance areas and need to meet specific criteria to do so. Alternative B would likely result in fewer ROW applications as it is more restrictive than Alternative A.

Under Alternatives C, D, and E, no lands would be allocated as open to ROW authorization within the Planning Area and only a portion of the BLM-administered lands within the Planning Area would be allocated as ROW avoidance areas. Most of the Planning Area would be allocated as ROW exclusion areas, making Alternatives C, D, and E the most restricted alternatives. It is likely that new ROWs would have to route around BENM as there would be no ROW open areas within the Planning Area under these alternatives. All lands and realty actions under Alternatives B, C, D, and

E would be completed in collaboration with the BEC; and the BLM and USDA Forest Service would coordinate with landowners on reasonable access as consistent with Proclamation 10285.

ES-5.2.7 RECREATION USE AND VISITOR SERVICES

Unmanaged or uncontrolled recreation can have definite impacts on and implications for the condition of Monument resources and objects. However, visitation can be a beneficial method of public and cultural education, if appropriate and culturally sensitive modes of thinking and visitation can be effectively communicated (see Appendix L). The various alternatives have differing levels of impacts (both beneficial and adverse), based on management direction, on recreational use and other Monument resources. Alternative A would recognize that regulations and limits are necessary but would attempt to make such limitations on recreation use as minimal as possible. This would benefit existing recreational users by keeping the majority of recreational opportunities open to the greatest extent possible. Alternative B would manage recreation via limiting or restricting public use as little as possible without compromising the protection of BENM objects. Similar to Alternative A, Alternative B would provide facilities adequate for anticipated use in appropriate areas. Alternative B would also provide the most on-site interpretation/educational materials. Compared to Alternative A, Alternatives C and E would place more emphasis on managing recreational activities via permitting and limitations on visitation group sizes and duration of stays. Alternative D would place far more restrictions and limits on recreational use in more remote areas compared to Alternative A; this could benefit users who seek solitude-oriented experiences. In areas without recreational development, Alternatives C, D, and E would provide mostly off-site interpretational materials, unless required on-site to address impacts to Monument objects. Such restrictions would benefit users seeking more primitive recreation settings on BENM. Alternative E would allow for the most extensive seasonal restrictions to allow for resource rest.

Designating SRMAs and RMZs, and, to a lesser extent, ERMA, can benefit specific recreational opportunities and experiences. Alternative A would designate the most acres of SRMAs and would therefore provide the most prescriptive management of allowable recreational activities and experiences on BENM. Being less prescriptive, ERMA provide greater flexibility of management to allow for adaptive change to recreational uses and infrastructure needs; however, if recreation increases in BENM as predicted, managing vast areas as ERMA could limit the BLM's ability to allocate resources and funding to address recreation-focused issues or needs compared to Alternative A. Alternatives B and C would provide slightly fewer SRMA, ERMA, and RMZ designations than Alternative A. Alternative D designates MAs and MZs rather than SRMAs, ERMA, or RMZs. Because Alternative D has the most OHV closed areas and generally less recreation to manage due to the number and size of MAs and MZs, the agencies would provide less interpretation and services across all spaces (on- or off-site) than under Alternatives B and C, which are meant to both provide more for recreational experiences and more directly manage recreation. Alternative D would not benefit recreation users as much as Alternative A. Conversely, Alternative E would not designate any RMAs or MAs. Recreation would be managed to meet resource protection and visitor safety objectives.

Alternatives A, B, C, and D would generally allow recreational shooting except in campgrounds or developed recreation sites, rock writing sites, and structural cultural sites (with the inclusion of WSAs and LWC under Alternative D). Alternatives B, C, and D would also prevent recreational shooting where prohibited under SRMAs, RMZs, or MAs. This management would continue to result in potential conflicts between user groups over recreational shooting. Recreational shooting activities would be prohibited in all areas of BENM under Alternative E. This prohibition does not apply to the use of firearms in the lawful pursuit of game. This would vastly reduce the potential for conflicts with other users in BENM when compared with all other alternatives and would benefit other user groups. Prohibiting recreational shooting would limit (Alternatives B, C, and D) or

preclude (Alternative E) this activity in the Planning Area and adversely impact those who engage in recreational shooting, potentially requiring them to find other areas of public land in the vicinity on which to engage in this activity.

Similar to Alternative A, under all alternatives, no area of BENM would be designated as OHV open. Alternative A closes the fewest acres to OHV use and provides the most OHV limited acreage and thus would provide the most OHV recreation opportunities, although, compared to Alternative A, Alternatives B and C do not result in any additional currently designated routes being closed to OHV use. Under Alternative A, OHV management would likely benefit motorized recreationists while resulting in user group conflicts and potentially detracting from the experience of non-motorized visitors due to noise and dust. Of all the action alternatives, Alternative B provides the most acreage of OHV limited and closes the fewest acres to OHV use, followed by Alternative E and then Alternative C. Alternative D closes the greatest area of BENM to OHV use and provides the lowest acreage of OHV limited areas as well, which would impact OHV users' ability to recreate in the majority of the Monument; however, this would preserve naturalness and improve the experience of non-motorized users by reducing recreation setting impacts from OHV use.

ES-5.2.8 TRAVEL, TRANSPORTATION, AND ACCESS MANAGEMENT

Potential effects on travel management would occur to varying degrees across alternatives. Route designations are implementation-level decisions that would be analyzed and approved in accordance with Proclamation 10285 and 43 Code of Federal Regulations 8342.1 separately through the travel management planning process. This process evaluates and designates routes to provide a high-quality travel network for a wide variety of uses. Examples of beneficial impacts of designating routes through a TMP include improved access, experience, and connectivity; the promotion of safety for all users; minimization of conflict among various uses of BLM-administered and NFS lands; and reduction in route redundancy, resource degradation, and habitat fragmentation in the planning area. TMPs may also provide an opportunity for coordinating transportation planning with San Juan County or adjacent communities. Under all alternatives, agencies would collaborate with the BEC on designation of routes in a TMP and would incorporate Traditional Indigenous Knowledge, as applicable. Such coordination could reduce access issues and management conflicts, improve the safety and convenience of the traveling public and Tribes, and provide a more sustainable use of resources.

Potential effects on access would occur to varying degrees across alternatives. Increased visitation under all alternatives would result in continued pressure on transportation assets, both non-motorized use within BENM and OHV use in surrounding areas. Under all alternatives, public use of BENM for landings and takeoffs of motorized aircraft would be allowed at Bluff Airport and Fry Canyon Airstrip.

Alternative A would manage the fewest acres of OHV closed areas (436,075 acres) of the alternatives. Travel planning within SRMAs and ERMAs under Alternative A would continue to recognize San Juan County's OHV route system and integrate it to the extent possible in meeting travel management and recreational goals and objectives. This would provide benefits for users seeking OHV opportunities because it would provide unique opportunities in areas identified as OHV limited while still meeting BLM goals and objectives for travel management and recreation. This could also result in impacts on natural resources, including destruction of vegetation, erosion, increased noise, habitat fragmentation, and other impacts (Ouren et al. 2007). Alternative A would continue to manage the existing network of non-motorized and non-mechanized trails per the 1986 Manti-La Sal LRMP, 2008 Moab RMP, 2008 Monticello RMP, and the 2020 ROD/MMPs. Agencies would manage the most acreage as closed to OHV use under Alternative D and would be most likely to adversely affect transportation and access for OHVs due to the scale of closures. The public

would be encouraged to stay on existing or designated trails under Alternative E. The agencies would identify whether specific areas would need to be closed to cross-country hiking to protect Monument objects, which could adversely affect non-motorized and non-mechanized access compared with the other alternatives.

Public use of BENM for landings and takeoffs of motorized aircraft would be allowed on designated airstrips in Alternatives B, C, D, and E and would include the potential to identify additional locations for public use of BENM for landings and takeoffs of motorized aircraft through implementation-level travel planning. These alternatives also include management direction to maintain existing and designated trails for non-motorized and non-mechanized use and would improve signage on travel corridors so that land users understand land use rules and regulations. This would improve non-motorized and non-mechanized trail access compared with Alternative A, as well as enable the agencies to protect BENM objects.

ES-5.2.9 LIVESTOCK GRAZING

Alternative A allocates the fewest acres unavailable/not suitable (43,309 USDA Forest Service; 96,930 BLM) for livestock grazing. Alternatives B, C, and E would increase the acres unavailable/not suitable for livestock grazing to 163,034 acres for both agencies combined. Alternative D would restrict grazing further and make 359,201 acres unavailable/not suitable for both agencies. Making these additional acres unavailable/not suitable for livestock grazing could have an economic impact to permittees or operators. Alternatives A, B, C, and E allow for the most AUMs and HMs for permitted use, 62,035 and 10,520 respectively. All alternatives would have an impact to water developments and range improvements, with Alternative A having the least impact and allowing for the most new improvements and developments, whereas Alternatives D and E restrict them and include the potential to remove existing improvements and developments, except where they help protect BENM objects.

ES-5.2.10 CLIMATE CHANGE

Methane emission from livestock grazing is the primary source of impacts to climate change from authorized activities in the Planning Area (Kauffman et al. 2022). Under Alternatives B, C, and E, emissions would be the same as under Alternative A. Alternative D, with 6% fewer AUM and 25% fewer HM allocations, would result in 12% fewer emissions compared with Alternative A. With proper grazing techniques, some of the emitted carbon can be sequestered and stored in soil and vegetation.

Under all alternatives, short-term greenhouse gas emissions would occur from prescribed fire and vegetation management and would vary on the size and frequency of such activities. Active vegetation management under the action alternatives would improve vegetation health and diversity, which would increase the carbon sequestration and storage potential in the Planning Area. Active vegetation management would improve landscape resiliency to wildfires more quickly compared with Alternative A, which would also offset some of the climate change impacts from other actions.

CHAPTER 1. PURPOSE AND NEED FOR ACTION

1.1. Introduction

Bears Ears National Monument (BENM or Monument) represents the culmination of more than a century of efforts to protect the ancestral homeland of five Tribal Nations that all refer to the area by the same name—Bears Ears, or *Hoon’Naqvut* for the Hopi people, *Shash Jáa* for the Navajo people, *Kwiyaqatu Nukavachi* for people of the Ute Indian Tribe and the Ute Mountain Ute Tribe, and *Ansh An Lashokdiwe* for the Zuni people.

Presidential Proclamation 9558 established BENM on December 28, 2016, and emphasized the compelling need to protect one of the most extraordinary cultural landscapes in the United States. On October 8, 2021, Presidential Proclamation 10285 restored the Monument boundaries and conditions established in Presidential Proclamation 9558 and retained approximately 11,200 acres that were added to the Monument by Presidential Proclamation 9681. Presidential Proclamation 10285 declares that the entire landscape reserved by the Proclamation is “an object of historic and scientific interest in need of protection” and that in the absence of reservation under the Antiquities Act, the objects identified within the full 1.36-million-acre boundary of BENM are not adequately protected. Presidential Proclamation 10285 specifies that BENM ensure “the preservation, restoration, and protection of the objects of scientific and historic interest on the Bears Ears region, including the entire monument landscape.”

Furthermore, Presidential Proclamation 10285 re-establishes the Bears Ears Commission (BEC) of Tribal Nations, “in accordance with the terms, conditions, and obligations set forth in Presidential Proclamation 9558 to provide guidance and recommendations on the development and implementation of management plans and on management of the entire monument” to ensure that “management decisions affecting the monument reflect expertise and traditional and historical knowledge of Tribal Nations.”

The geographic scope of the Planning Area and Decision Area are further defined in Section 1.3.

The Bureau of Land Management (BLM) and the U.S. Department of Agriculture, Forest Service (USDA Forest Service) (collectively referred to as “the agencies”), in coordination with the BEC, are jointly preparing this new resource management plan and associated environmental impact statement (RMP/EIS) pursuant to BLM land use planning regulations at 43 Code of Federal Regulations (CFR) 1610. Although the USDA Forest Service has its own set of land use planning and administrative review processes to ensure compliance with relevant laws and regulations, throughout this process, the BLM and USDA Forest Service have agreed that the USDA Forest Service will adopt the BLM’s land use planning and administrative review processes as allowed by 36 CFR 219.59 (BLM and USDA Forest Service 2022a). Given this, BLM regulations and direction are cited throughout this document and apply to both agencies.

The Federal Land Policy and Management Act of 1976 (FLPMA) establishes the policy of the United States concerning the management of federally owned land administered by the BLM. The BLM “shall manage the public lands under principles of multiple use and sustained yield . . . except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law” (43 United States Code [USC] 1732(a)). Proclamation 10285—in accordance with the Antiquities Act of 1906—dedicated the lands in BENM to specific uses by designating the Monument and reserving the entirety of the lands in the boundary of BENM as the smallest area compatible with the protection of its objects. The Omnibus Public Land Management Act of 2009 (Public Law 111-11) requires units of the National

Conservation Lands, which includes BENM, to be managed “in accordance with any applicable law (including regulations) relating to any component of the system . . . and . . . in a manner that protects values for which the components of the system were designated.”

The following appendices support the information provided in this RMP/EIS:

- Appendix A: Figures
- Appendix B: Laws, Regulations, Policies, and Plans Considered in the Development of the Resource Management Plan and Environmental Impact Statement
- Appendix C: Tribal Nations Collaboration Framework
- Appendix D: Desired Wildland Fire Condition and Condition Class
- Appendix E: Supporting Information for Recreation and Visitor Services Decisions
- Appendix F: Stipulations Applicable to Surface-Disturbing Activities
- Appendix G: Best Management Practices
- Appendix H: Travel Management Plan Criteria
- Appendix I: Supporting Data for Water Resources
- Appendix J: Cumulative Actions
- Appendix K: Assessment, Inventory, and Monitoring Data
- Appendix L: *Bears Ears Inter-Tribal Coalition: A Collaborative Land Management Plan for the Bears Ears National Monument*
- Appendix M: Amendment Language to Manti-La Sal National Forest Land and Resource Management Plan

1.2. Purpose and Need

Proclamation 10285 directs the BLM and USDA Forest Service to “prepare and maintain a new management plan for the entire monument” for the specific purposes of “protecting and restoring the objects identified [in Proclamation 10285] and in Proclamation 9558.”

Accordingly, the agencies’ underlying purpose and need is to provide a framework, including goals, objectives, and management direction, to guide the management of BENM consistent with the protection of BENM objects and other applicable laws, regulations, and policies.

The USDA Forest Service seeks to amend the 1986 Manti-La Sal National Forest Land and Resource Management Plan by incorporating the boundary area and resource management plan of BENM (see Appendix M).

The following purposes and desired outcomes are set forward explicitly in Presidential Proclamation 10285, represent direction and guidance required in BLM and USDA Forest Service regulations and policy, and address present and historical BENM management challenges:

1. Protect Monument objects in large, remote, rugged, and connected landscapes. This includes the entire landscape within the Monument and the objects for which the Monument was established to protect.

Needs and challenges: For centuries, BENM has been a place that holds deep cultural and spiritual connections for many communities. BENM includes a diversity of ecotypes, geological and paleontological resources, vegetation, and wildlife. During the last century, uranium mining activities and livestock grazing, as well as medicinal herb gathering, fuel wood collection, and

other traditional practices, have been common activities in this part of southeastern Utah. Mining activity within BENM is rare today, but livestock grazing remains an important local economic use of the landscape. Recreational visitation is an important driver of the local economy, with the area becoming world famous for rock climbing and the increased popularity of off-highway vehicle (OHV) use, cultural tourism, and other forms of recreation, which take place on a road network largely developed for mining and grazing activities. The increased demand on BENM's resources, and subsequently, Monument objects, poses a challenge to balance the wide variety of uses of the landscape with the protection of Monument objects. Planning decisions can define resource uses and land designations to help resolve conflicts between various uses and object protection.

2. Protect the historical and cultural significance of this landscape. This includes objects identified in Presidential Proclamation 10285 such as numerous archaeological sites, modern Tribal uses, other traditional descendant community uses, historic routes and trails, historic inscriptions, and historic sites.

Needs and challenges: Public visitation, permitted activities, and climate change have the potential to impact cultural resources. Traditional Indigenous Knowledge, interpretation, and management guidance to help inform the public and protect various cultural resources and traditional uses are needed. Planning decisions can help provide management direction to protect cultural resources and traditional uses and to provide direction for a lasting and effective partnership with Tribal Nations and the BEC.

3. Protect the unique and varied natural and scientific resources of these lands. This includes objects identified in Presidential Proclamation 10285 such as biological resources, including various plant communities, relict and endemic plants, diverse wildlife, including unique species, and habitat for Endangered Species Act (ESA)-listed species.

Needs and challenges: Increasing uses of the landscape such as rock climbing, OHV use, and cultural tourism, whether through an organized or commercial event with a Special Recreation Permit (SRP) or by the public, can impact various plant and wildlife communities and habitats. Planning decisions can help re-evaluate and balance the trade-offs for the desired uses of the landscape with the need to protect the Monument's biological resources identified as objects.

4. Protect scenic qualities, including night skies, natural soundscapes, diverse and visible geology, and unique areas and features.

Needs and challenges: BENM is surrounded by various National Park Service (NPS) and Utah State Park units designated as Dark Sky Parks, and the region is recognized for its uniquely dark night sky. Additionally, the remoteness of the region provides the opportunity for a quiet, natural soundscape and the varied geological features provide incredibly unique scenic qualities. Planning decisions should reflect the need to protect these visual and scenic qualities.

5. Protect important paleontological resources.

Needs and challenges: BENM is becoming an increasingly important region for the study of paleontological resources. Some sites containing paleontological resources also have ties to the stories and cultures of Indigenous people. To protect these important resources, planning decisions should be made to support appropriate access, use, and protection of paleontological resources.

6. Ensure that management of these lands will incorporate traditional and historical knowledge related to the use and significance of the landscape.

Needs and challenges: Tribal Nations and descendant communities care about and learn from cultural resources found in BENM and the BENM landscape. Indigenous peoples and descendant communities still use the BENM landscape for traditional, cultural, and spiritual needs, as well as for subsistence purposes. Any BLM or USDA Forest Service action has the potential to impact spiritual, traditional, or subsistence uses of the BENM landscape; therefore, it is critical that planning decisions reflect Traditional Indigenous Knowledge and provide a framework to incorporate traditional knowledge into any future implementation activities. Access for some traditional uses, however, such as the use of plants, wildlife, and water, may in some cases cause impacts to cultural resources, sensitive soils, and vegetation. Firewood, plant, wildlife, and water collection is an important traditional use and adds to the quality of life for local communities, and the planning decisions should consider how to address the potential impacts while also balancing the positive aspects like fuel load reduction and subsistence needs.

7. Provide for uses of Monument lands, so long as those uses are consistent with the protection of BENM objects.

Needs and challenges: Public land uses within BENM, such as livestock grazing and recreation, are important to the economic opportunities and quality of life of the local communities surrounding BENM. Although these two uses are not identified in Presidential Proclamation 10285 as objects, these are discussed as important land uses in the area. Planning decisions should consider how to protect Monument objects with consideration of other uses of the landscape.

1.3. Planning Area and Decision Area

The BLM's *Land Use Planning Handbook* (H-1601-1) differentiates geographic areas associated with planning. The BENM Planning Area boundary includes all lands regardless of jurisdiction; however, the management direction in the RMP/EIS would only apply to the Decision Area, which includes the lands within the Planning Area that fall under BLM or USDA Forest Service jurisdiction, including subsurface minerals. (As noted previously, the USDA Forest Service is using the BLM's administrative review processes for the purposes of this RMP/EIS.) The Planning Area covers approximately 1.49 million acres, including all exterior boundaries, and represents the area that the agencies will consider in the planning effort for this RMP/EIS. The Decision Area covers approximately 1.36 million acres and is enclosed within the Planning Area. The remaining acreage not included in the Decision Area is managed by private owners, the Utah Trust Lands Administration, or the State of Utah.

The Planning Area and Decision Area are depicted in Appendix A, Figure 1-1, Planning Area and Decision Area. Surface ownership within the Planning Area is detailed in Table 1-1.

Table 1-1. Surface Ownership in the Planning Area

Jurisdiction	Acres*
BLM	1,075,000
Private	13,000
State	112,000
USDA Forest Service	289,000
Total	1,490,000

Source: BLM and USDA Forest Service GIS (2022b).

* Acreages are approximate and for planning purposes only.

The Planning Area is near or adjacent to other areas of national and international significance, including Canyonlands National Park, Arches National Park, Capitol Reef National Park, Mesa Verde National Park, Glen Canyon National Recreation Area (NRA), Natural Bridges National Monument (NBNM), Grand Staircase-Escalante National Monument (GSENM), Canyons of the Ancients National Monument, Dead Horse Point State Park, Goosenecks State Park, and Hovenweep National Monument as well as the sovereign lands of the Hopi Tribe, the Navajo Nation, the Ute Indian Tribe of the Uintah and Ouray Reservation, the Ute Mountain Ute Tribe, and the Zuni Tribe.

1.4. Issues Considered

1.4.1. Issues and Related Resource Topics Identified through Scoping

The agencies identified issues to be addressed in the RMP/EIS through public scoping; internal scoping; and outreach to Tribal Nations, the BEC, cooperating agencies, and consulting parties. Public scoping ensures early involvement by parties interested in the environmental analysis process and allows those participants to meaningfully contribute to the decision-making process of the agencies.

Table 1-2 presents the primary issues identified during internal and external scoping that are within the scope of the development of the RMP/EIS and that are analyzed in detail. These resources are organized into two general categories: the natural environment and the built environment (see Section 3.4 and Section 3.5). Some resources encompass aspects of both and are placed in one or the other section out of organizational necessity. Additional detail regarding the scoping process, scoping comments, and issues identified during scoping is available in *Bears Ears National Monument Resource Management Plan and Environmental Impact Statement Scoping Report* (BLM and USDA Forest Service 2022c).

Table 1-2. Issues Analyzed in Detail

Resource Topic	Issues
NATURAL ENVIRONMENT	
Paleontological Resources and Geology	<p>How would proposed management decisions regarding paleontological resource management (such as curation, protection, survey, collection, outreach, and interpretation) impact paleontological resources, research communities, local communities, and visitor experience?</p> <p>How would proposed land use allocations and discretionary uses impact paleontological resources?</p> <p>How would proposed land use allocations and discretionary uses impact unique geological features?</p>
Soils and Biological Soil Crusts	<p>How would existing and proposed land use allocations affect the structure, health, and function of soil resources (including biological soil crusts and other sensitive soils) across the landscape?</p> <p>How would BENM management actions impact soils (e.g., degradation, erosion, preservation, etc.), including biological soil crusts and other sensitive soils?</p>
Water Resources (Groundwater, Surface Water, Wetlands, Riparian Areas, Floodplains, Water Quality)	<p>How would BENM management affect surface water hydrology, water quality, water quantity, and riparian and wetland areas?</p> <p>How would BENM management affect groundwater quality and quantity, groundwater-dependent ecosystems, public Drinking Water Source Protection zones, groundwater protection zones, or associated surface water resources?</p>
Terrestrial Habitat and Vegetation Resilience and Conservation (large-scale and local ecotypes)	<p>How would existing and proposed management prescriptions (such as those made for livestock grazing, recreation, and lands and realty actions) and discretionary uses affect terrestrial vegetation, including special status plant species?</p> <p>How would existing and proposed vegetation management affect terrestrial vegetation and special status plant species?</p>

Resource Topic	Issues
Noxious Weeds and Nonnative Invasive Plants	<p>How would existing and proposed land use allocation decisions about grazing, recreation, lands and realty actions, and discretionary uses affect noxious weeds and invasive nonnative plants?</p> <p>How could existing and proposed vegetation management affect noxious weeds and invasive nonnative plants?</p>
Fuels, Wildfire, and Prescribed Fire and Forestry and Woodlands	<p>How do existing and proposed vegetative treatments (e.g., prescribed fire, thinning) and harvesting affect the health and preservation of woodlands, the objects of the Monument related to forests, and Indigenous peoples' traditional and ceremonial uses?</p> <p>How do current and proposed fire and fuels management techniques affect ecosystem function, fire regime, cultural resources, and health and human safety?</p>
Lands with Wilderness Characteristics	<p>How would proposed land use allocations and discretionary uses affect the apparent naturalness, size, and outstanding opportunities for solitude or primitive and unconfined recreation of lands with wilderness characteristics?</p>
Special Land Designations for Conservation and Protection	<p>How would management of BENM affect suitable wild and scenic river segments?</p> <p>How would proposed management prescriptions and other management actions affect the relevant or important values of existing and nominated Areas of Critical Environmental Concern and the ecological values of Research Natural Areas?</p> <p>How would relevant and important values be impacted by the decision to not carry forward or not designate an Areas of Critical Environmental Concern?</p> <p>How would BENM management affect the values and wilderness characteristics associated with wilderness study areas?</p>
Wildlife and Fisheries	<p>How would proposed management affect wildlife and fisheries habitat and populations including special status species and species otherwise generally identified in Proclamations 10285 and 9558?</p> <p>How would the proposed management affect state wildlife agency habitat management goals and associated actions related to big game winter and summer range movement and migration corridors and migration corridors for birds, insects, and fish?</p>
Visual Resources and Scenery	<p>How would proposed management actions affect scenic quality, landscape (scenic) character, scenic integrity, and the public's highly valued experience of enjoying scenery?</p> <p>How would proposed management actions affect inventoried visual values?</p>
Natural Soundscapes	<p>How would proposed management actions under the alternatives affect natural quiet soundscapes?</p>
Air Quality	<p>How would proposed management actions and management prescriptions contribute to air pollutant emissions and affect air quality and visibility?</p>
Night Skies	<p>How would proposed management actions under the alternatives affect dark night skies?</p>
BUILT ENVIRONMENT	
Cultural Resource Management, Indigenous People's Religious Concerns, and Tribal Use	<p>How would the proposed management affect continued traditional uses of religious or cultural importance to Tribal Nations?</p> <p>How would the BENM resource management plan affect cultural resources, including cultural landscapes, traditional uses, and historic properties?</p> <p>How would the BENM resource management plan provide information and education about cultural resources, including cultural landscapes, traditional uses, and historic properties, to the public?</p> <p>How would the BENM resource management plan affect uses of cultural resources?</p>
Archaeological Sites and Historic Communities, Historic Resources	<p>How would BENM management impact archaeological resources (pre-contact, post-contact, and multicomponent in temporal affiliation) that are either not eligible, eligible or listed in the National Register (i.e., historic properties)?</p> <p>How would the BENM resource management plan affect cultural resources, including cultural landscapes, traditional uses, and archaeological historic properties?</p> <p>How would the BENM resource management plan provide information and education about cultural resources, including cultural landscapes, traditional uses, and archaeological historic properties, to the public?</p> <p>How would BENM management impact post-contact historic communities and/or post-contact historic archaeological locations that are either not eligible, eligible, or listed in the National Register (i.e., historic properties)?</p> <p>How would the BENM resource management plan affect historic communities and post-contact historic properties?</p> <p>How would the BENM resource management plan provide information and education about historic communities and post-contact historic properties to the public?</p>

Resource Topic	Issues
Environmental Justice and Social and Economic Values	<p>Would proposed management result in disproportionate or adverse impacts on environmental justice populations?</p> <p>How would proposed management impact jobs and income in the socioeconomic analysis area?</p> <p>How would proposed management impact the nonmarket benefits individuals receive from BLM-administered and NFS lands and public resources?</p>
Lands and Realty	How would proposed land use allocations and discretionary uses affect land use authorizations and land tenure the Planning Area?
Recreation Use and Visitor Services	How would proposed management affect the agencies' ability to provide recreation objectives, recreation setting characteristics, and Recreation Opportunity Spectrum classes?
Travel, Transportation, and Access Management	How would proposed travel designations affect the travel and transportation system in BENM, including impacts to resources?
Livestock Grazing	How would proposed management of Monument objects affect rangeland forage conditions and livestock grazing operations, including range improvements?
Climate Change	<p>How would land use allocations and discretionary uses in BENM contribute to greenhouse gas emissions?</p> <p>How would land use allocations and discretionary uses affect long-term carbon storage and sequestration in BENM?</p>

1.4.2. Issues Considered but Not Analyzed in Detail

The following issues were considered but, for the reasons provided below, are not being analyzed in detail.

- How would proposed management impact wild horses and burros?
 - There are no herd management areas in the Planning Area. The only horses or burros occasionally present are due to trespass and are not under the jurisdiction of the agencies.
- How would proposed management affect valid existing rights for minerals in the Decision Area?
 - Proclamation 10285 appropriated and withdrew BENM “from all forms of entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the United States Forest Service, from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing other than by exchange that furthers the protective purposes of the monument.” As a result, BENM is closed to oil and gas, geothermal, coal, and nonenergy solid minerals leasing and closed to location of mining claims under the Mining Law of 1872. The Monument is also closed to mineral materials disposal (e.g., sand, gravel, and petrified wood) as a result of 30 USC 601. The Monument, however, is subject to valid existing rights, meaning that such rights are generally unaffected by the Monument. As a result, that issue is not analyzed in depth.
- How would proposed management affect public health and safety around abandoned mines in the Decision Area?
 - BLM maintains an inventory of abandoned mines on BLM-administered lands. It prioritizes which mines to remediate based on the physical and environmental hazards at each site. Proposed management would not measurably change public health and safety concerns related to abandoned mines in BENM. Abandoned mine land projects would be analyzed through site-specific National Environmental Policy Act (NEPA) analysis.

1.5. Planning Criteria

Planning criteria provide the constraints, standards, and guidelines for the planning process and help determine what the agencies will include in their scope of planning and analysis. Planning criteria may be found in *Bears Ears National Monument Resource Management Plan and Environmental Impact Statement. Analysis of the Management Situation (2022 AMS)* prepared for this project (BLM and USDA Forest Service 2022c).⁶

1.6. Relationship to Other Policies and Plans

The agencies recognize the importance of state, Tribal, and local plans. The agencies have collaborated with other federal, state, and local agencies and governmental entities throughout the RMP/EIS process. Coordination with other agencies has been sought throughout the RMP/EIS development process. State and local governments, other federal agencies, and Tribal government involvement has proven most helpful throughout scoping, alternatives development, impact analysis, and public and agency comment periods.

The agencies conducted a detailed review of relevant state and county plans to evaluate the consistency of the alternatives presented in the RMP/EIS with said plans and found that the RMP/EIS is generally consistent with state and county plans. The plans identified below do not identify management specific to the Monument and were not developed using the agencies' land use regulations. The RMP/EIS generally does not use language from state and county plans, although the agencies did develop the RMP/EIS to be consistent with general management described in the plans, including providing access to lands in the Planning Area in a responsible manner.

The agencies have developed the proposed RMP/EIS to be consistent with or complementary to the management actions in the following plans and policies to the maximum extent, consistent with Presidential Proclamation 10285; FLPMA; the National Forest Management Act (NFMA); and other applicable laws and regulations governing the administration of public lands. Additionally, the agencies have considered and developed the RMP/EIS to be consistent with the applicable laws, regulations, policies, and plans listed in Appendix B. Chapter 3 of the 2022 AMS includes a list of relevant federal laws as well as agency plans, policies, and programs.

1.6.1. Federal Plans and Policies

The federal lands within the Planning Area are currently managed by the BLM and the USDA Forest Service) (collectively referred to as “the agencies”) primarily under four documents:

- *Bears Ears National Monument: Record of Decision and Approved Monument Management Plans Indian Creek and Shash Jáa Units* (BLM 2020). The document is referred to hereafter as the 2020 ROD/MMPs.⁷
- *Bureau of Land Management Moab Field Office Record of Decision and Approved Resource Management Plan* (BLM 2008a). The document is referred to hereafter as the 2008 Moab RMP.⁸

⁶ The 2022 AMS is referred to frequently throughout this RMP/EIS; therefore, the author-date citation is provided at first mention only.

⁷ The 2020 ROD/MMPs is referred to frequently throughout this RMP/EIS; therefore, the author-date citation is provided here at first mention only.

⁸ The 2008 Moab RMP is referred to frequently through this RMP/EIS; therefore, the author-date citation is provided here at first mention only.

- *Bureau of Land Management Monticello Field Office Record of Decision and Approved Resource Management Plan*, as amended (BLM 2008b). The document is referred to hereafter as the 2008 Monticello RMP.⁹
- *Land and Resource Management Plan: Manti-LaSal National Forest*, as amended (USDA Forest Service 1986). The document is referred to hereafter as the 1986 Manti-La Sal LRMP.¹⁰

The ROD for this RMP/EIS will replace the 2020 ROD/MMPs and portions of the 2008 Monticello RMP and 2008 Moab RMP covered by the Planning Area. The ROD will also amend the portions of the 1986 Manti-La Sal LRMP covered by the Planning Area (see Appendix M).

During the development of this RMP/EIS, the federal policies and plans included in Appendix B and the 2022 AMS were also considered to ensure consistency.

1.6.2. State and County Plans and Policies

During the development of this RMP/EIS, the state and county plans included in Appendix B and the 2022 AMS were considered for consistency.

The management of mineral resources presents the main inconsistency between the management under all alternatives of the RMP/EIS and the management in the plans listed above. Subject to valid existing rights, Proclamation 10285 appropriated and withdrew the federal lands within the Monument from all forms of mineral entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the USDA Forest Service from location, entry, and patent under the mining laws, and from disposition under all laws related to mineral and geothermal leasing, other than by exchange, that furthers the protective purposes of the Monument under Proclamation 10285. Therefore, management of mineral resources in BENM is considered inconsistent with the state and county plans above, as mineral development within the Monument that is not associated with valid existing rights would not occur. The State of Utah and San Juan County have not notified the agencies of inconsistencies with their plans over the course of the planning process, as described in 43 CFR 1610.3-2(c).

1.6.3. Tribal Plans

The BEC is supported by and works in concert with the Bears Ears Inter-Tribal Coalition (BEITC). Together, the BEC and BEITC developed and presented to the agencies the *Bears Ears Inter-Tribal Coalition: A Collaborative Land Management Plan for the Bears Ears National Monument* (referred to hereafter as the 2022 BEITC LMP, and provided as Appendix L) (BEITC 2022),¹¹ which the agencies have been using in collaboration with the BEC to guide the development of the RMP/EIS to align with Presidential Proclamation 10285's mandate that Monument management reflect the "expertise and historical and traditional knowledge of Tribal Nations" (see Appendix L). As stated in the 2022 BEITC LMP,

Traditional knowledge of Tribal Nations with ancestral ties to the region is fundamental to collaborative management of BENM and long-term preservation of

⁹ The 2008 Monticello RMP is referred to frequently throughout this RMP/EIS; therefore, the author-date citation is provided here at first mention only.

¹⁰ The 1986 Manti-La Sal LRMP is referred to frequently throughout this RMP/EIS; therefore, the author-date citation is provided here at first mention only.

¹¹ The 2022 BEITC LMP is referred to frequently throughout this RMP/EIS; therefore, the author-date citation and reference to Appendix L are provided here at first mention only.

the cultural landscape. The Federal land managers will benefit from Native American insights and input. Juxtaposing traditional Native and mainstream Western understandings of time, space, and valid modes of knowledge would be of benefit to Natives and non-Natives alike. (See Appendix L:64)

For this reason, Traditional Indigenous Knowledge is integrated alongside Western scientific information throughout the RMP/EIS.

CHAPTER 2. ALTERNATIVES

2.1. Description of the Alternatives Analyzed in this Resource Management Plan and Environmental Impact Statement

The alternatives developed for managing BENM were designed to be compatible with protection of Monument objects, as outlined in Presidential Proclamations 9558 and 10285 and are therefore aligned with the purpose and need for the RMP/EIS. The alternatives also serve to present a range of management options while remaining consistent with the protection of Monument objects. The BLM Authorized Officer and USDA Forest Service Responsible Official were responsible for the final decisions on which alternatives to analyze in the RMP/EIS.

This section presents the reasonable range of alternatives developed by the agencies and the BEC, in coordination with the cooperating agencies (see Section 4.3). Alternatives were developed in response to issues identified through public and internal scoping, in response to deficiencies in current management strategies, and to provide greater opportunities for resource management and incorporation of Traditional Indigenous Knowledge. Table 2-1 highlights the quantifiable differences among alternatives relative to what they establish.

The agencies used GIS data to perform acreage calculations and to generate the maps in Appendix A. Calculations depend on the quality and availability of data. Calculations in this RMP/EIS are rounded to the nearest acre or tenth of a mile. Given the scale of the analysis, the compatibility constraints between data sets, and the lack of data for some resources, all calculations are approximate; they serve for comparison and analytic purposes only. Total acreages may not be additive.

Likewise, the maps in Appendix A are provided for illustrative purposes and are subject to the limitations discussed above. The agencies may receive additional or updated data; therefore, acreages may be recalculated and revised at a later date.

Table 2-1. Comparison Summary of Alternatives

Resource, Resource Use, or Special Designation	Alternative Acreages				
	A	B	C	D	E
Wood Product Harvest					
Closed	648,392	433,148	433,148	433,148	*
Open	715,667	930,910	930,910	930,910	*
BLM Lands with Wilderness Characteristics	A	B	C	D	E
Manage to conserve wilderness characteristics	48,954	97,403	97,403	419,128	419,128
USDA Forest Service Wilderness Area	A	B	C	D	E
Dark Canyon Wilderness	46,333	46,333	46,333	46,333	46,333
Special Designations	A	B	C	D	E
Indian Creek Areas of Critical Environmental Concern (ACEC)	3,936	3,936	3,936	3,936	3,936
Lavender Mesa ACEC	649	649	649	649	649
San Juan River ACEC (portion within Planning Area)	1,555	0	0	0	1,555
Shay Canyon ACEC	119	0	0	0	119
Valley of the Gods ACEC	22,716	22,716	22,716	22,716	22,716

Resource, Resource Use, or Special Designation	Alternative Acreages				
John's Canyon Paleontological ACEC	0	0	0	1,542	11,465
Aquifer Protection ACEC	0	0	0	1,012,371	85,856
Cliff Dwellers Pasture Research Natural Area	266	266	266	266	266
Colorado River #2 Wild and Scenic River (WSR)	809	809	809	809	809
Colorado River #2 WSR (portion within Planning Area)	759	759	759	759	759
Colorado River #3 WSR	987	987	987	987	987
Colorado River #3 WSR (portion within Planning Area)	752	752	752	752	752
Dark Canyon WSR	1,888	1,888	1,888	1,888	1,888
Dark Canyon WSR (portion within Planning Area)	1,887	1,887	1,887	1,887	1,887
San Juan River #5 WSR	1,875	1,875	1,875	1,875	1,875
San Juan River #5 WSR (portion within Planning Area)	1,247	1,247	1,247	1,247	1,247
Bridger Jack Mesa Wilderness Study Area (WSA)	5,233	5,233	5,233	5,233	5,233
Butler Wash WSA	22,051	24,312	24,312	24,312	24,312
Cheese Box Canyon WSA	14,871	14,871	14,871	14,871	14,871
Dark Canyon WSA	67,840	67,840	67,840	67,840	67,840
Fish Creek Canyon WSA	46,097	46,097	46,097	46,097	46,097
Grand Gulch WSA	105,194	105,194	105,194	105,194	105,194
Indian Creek WSA	6,469	6,469	6,469	6,469	6,469
Mancos Mesa WSA	50,846	50,846	50,846	50,846	50,846
Mule Canyon WSA	6,014	6,014	6,014	6,014	6,014
Road Canyon WSA	52,344	52,344	52,344	52,344	52,344
South Needles WSA	159	159	159	159	159
Inventoried Roadless Areas USDA Forest Service (minus Research Natural Area)	90,190	90,190	90,190	90,190	90,190
Visual Resource Management (VRM)	A	B	C	D	E
VRM Class I	411,245	410,236	507,746	802,045	1,049,081
VRM Class II	304,949	646,619	549,685	272,526	25,082
VRM Class III	212,623	18,144	17,568	534	0
VRM Class IV	143,845	0	0	0	0
Scenic Integrity Objective (SIO) Very High	N/A	46,858	46,858	46,858	287,613
SIO High	N/A	242,906	242,906	242,906	1,238
SIO Moderate	N/A	9	9	9	0
SIO Low	N/A	0	0	0	0
Visual Quality Objective (VQO) Preservation	50,671	N/A	N/A	N/A	N/A
VQO Retention	9,068	N/A	N/A	N/A	N/A
VQO Partial Retention	102,584	N/A	N/A	N/A	N/A
VQO Modification	125,207	N/A	N/A	N/A	N/A
Lands and Realty	A	B	C	D	E
Right-of-way (ROW) exclusion BLM	402,985	407,038	505,935	802,678	1,058,613
ROW (special use) exclusion USDA Forest Service	46,298	46,343	46,343	46,343	46,343

Resource, Resource Use, or Special Designation	Alternative Acreages				
ROW avoidance BLM	147,742	662,439	569,020	272,277	16,342
ROW avoidance USDA Forest Service	32,587	0	0	0	0
Open to ROW authorization BLM	524,229	5,477	0	0	0
Open to ROW authorization USDA Forest Service	210,218	0	0	0	0
USDA Forest Service Special Use Avoidance Area	0	242,774	242,774	242,774	242,774
Recreation – special recreation management areas (SRMAs), extensive recreation management areas (ERMAs), and recreation management zones (RMZs)	A	B	C	D	E
BENM Indian Creek SRMA	48,937	0	0	0	N/A
BENM Indian Creek ERMA	22,959	0	0	0	N/A
BENM Shash Jáa SRMA	97,472	0	0	0	N/A
Arch Canyon Backcountry RMZ	13,322	0	0	0	N/A
Arch Canyon RMZ	5,457	0	0	0	N/A
McLoyd Canyon – Moon House RMZ	318	0	0	0	N/A
San Juan Hill RMZ	2,828	0	0	0	N/A
South Elks/Bears Ears RMZ	5,692	0	0	0	N/A
The Points RMZ	13,432	0	0	0	N/A
Trail of the Ancients RMZ	30,612	0	0	0	N/A
Beef Basin SRMA	17,191	0	0	0	N/A
Canyon Rims SRMA	7,411	7,413	7,413	0	N/A
Cedar Mesa SRMA	326,090	344,628	344,628	0	N/A
Arch Canyon RMZ	0	3,344	3,344	0	N/A
Cedar Mesa Backpacking RMZ	0	34,833	34,833	0	N/A
Comb Ridge RMZ	0	21,980	21,980	0	N/A
Grand Gulch RMZ	37,388	0	0	0	N/A
Moon House RMZ	0	318	318	0	N/A
Trail of the Ancients RMZ	0	7,063	7,063	0	N/A
Natural Bridges Overflow RMZ	0	0	0	0	N/A
Dark Canyon SRMA	30,810	0	0	0	N/A
Indian Creek SRMA	41,226	74,783	74,783	0	N/A
Indian Creek Corridor RMZ	3,459	3,459	3,459	0	N/A
San Juan River SRMA (portion within Planning Area)	2,815	5,355	5,355	0	N/A
San Juan River SRMA (portion outside Planning Area)	6,056	0	0	0	N/A
San Juan Hill RMZ	0	1,717	1,717	0	N/A
Sand Island RMZ	0	278	278	0	N/A
Tank Bench SRMA	2,721	0	0	0	N/A
White Canyon SRMA	2,825	0	0	0	N/A
Monticello ERMA (portion within Planning Area)	477,229	0	0	0	N/A
Monticello ERMA (portion outside Planning Area)	712,972	0	0	0	N/A
Beef Basin ERMA	0	25,083	25,083	0	N/A

Resource, Resource Use, or Special Designation	Alternative Acreages				
Fable Valley RMZ	0	7,870	7,870	0	N/A
Dark Canyon ERMA	0	40,829	40,829	0	N/A
Dark Canyon Backpacking RMZ	0	18,799	18,799	0	N/A
Valley of the Gods ERMA	0	45,763	45,763	0	N/A
Goosenecks RMZ	0	96	96	0	N/A
White Canyon ERMA	0	124,827	124,827	0	N/A
Bicentennial Highway RMZ	0	4,178	4,178	0	N/A
Natural Bridges Overflow RMZ	0	1,458	1,458	0	N/A
White Canyon Canyoneering RMZ	0	7,222	7,222	0	N/A
Canyon Rims MA	N/A	N/A	N/A	7,414	N/A
Cedar Mesa MA	N/A	N/A	N/A	348,043	N/A
Cedar Mesa Backpacking MZ	N/A	N/A	N/A	38,177	N/A
Comb Ridge MZ	N/A	N/A	N/A	21,980	N/A
Moon House MZ	N/A	N/A	N/A	318	N/A
Trail of the Ancients MZ	N/A	N/A	N/A	7,063	N/A
Natural Bridges Overflow MZ	N/A	N/A	N/A	1,458	N/A
Indian Creek MA	N/A	N/A	N/A	67,310	N/A
Indian Creek Corridor MZ	N/A	N/A	N/A	3,459	N/A
San Juan River MA (portion within Planning Area)	N/A	N/A	N/A	5,350	N/A
Sand Island MZ	N/A	N/A	N/A	278	N/A
Dark Canyon MA	N/A	N/A	N/A	18,802	N/A
Valley of the Gods MA	N/A	N/A	N/A	34,389	N/A
White Canyon MA	N/A	N/A	N/A	7,222	N/A
Zones	A	B	C	D	E
Front Country	N/A	N/A	N/A	N/A	18,995
Outback	N/A	N/A	N/A	N/A	265,299
Passage	N/A	N/A	N/A	N/A	7,498
Remote	N/A	N/A	N/A	N/A	1,072,587
USDA Forest Service Recreation Opportunity Spectrum	A	B	C	D	E
Primitive	48,440	48,440	48,440	48,440	48,440
Roaded Natural	25,700	25,700	25,700	25,700	25,700
Semi-Primitive Motorized	86,163	86,163	86,163	86,163	86,163
Semi-Primitive Non-Motorized	128,752	128,752	128,752	128,752	128,752
Travel and Transportation Management	A	B	C	D	E
BLM Closed to OHV travel	389,645	389,645	487,048	805,932	392,989
BLM OHV travel limited	685,403	685,403	588,000	269,117	682,059
BLM Open to OHV travel	0	0	0	0	0
USDA Forest Service Closed to OHV travel	46,430	176,982	176,982	176,982	176,982
USDA Forest Service Limited to OHV travel	242,677	112,122	112,122	112,122	112,122

Resource, Resource Use, or Special Designation	Alternative Acreages				
	A	B	C	D	E
Livestock Grazing					
Available (BLM) / Suitable (USDA Forest Service)	1,223,820	1,194,529	1,194,529	953,692	1,194,529
Trailing Only	3,952	5,218	5,218	49,889	5,218
Trailing Only/Emergency Grazing	1,277	1,277	1,277	1,277	1,277
Unavailable (BLM) / Not Suitable (USDA Forest Service)	135,007	163,034	163,034	359,201	163,034

Note: N/A = not applicable.

* See Table 2-7 and the direction for Alternative E, which is that the agencies would collaborate with the BEC and Tribal Nations to identify specific areas within BENM that would be open or closed to wood product harvest.

2.1.1. Approaches Common to All Alternatives

All alternatives would incorporate the intent of the intergovernmental cooperative agreement between the Tribal Nations that make up the BEC and the BLM and USDA Forest Service to cooperate and collaborate in the management of BENM. This shared stewardship includes the federal agencies' commitment to ensure that Tribal knowledge and local expertise is reflected in the agency decision-making process for BENM, including through regular and project-specific communications. Further, the federal agencies acknowledge the responsibility to protect the ceremonies, rituals, and traditional uses that are part of the Tribal Nations' way of life on these lands since time immemorial, both in the land use plan and through the plan's implementation.

In accordance with Presidential Proclamation 10285, if grazing permits or leases are voluntarily relinquished by the existing holders, the lands covered by such permits or leases would be retired from livestock grazing. Forage would not be reallocated for livestock grazing purposes unless the Secretaries specifically find that such reallocation would advance the purposes of the Monument designation.

Presidential Proclamation 10285 withdrew BENM from all forms of mineral entry and location, subject to valid existing rights. The lands previously available for mineral and energy activities under the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP are no longer available for such use, subject to valid existing rights. All management in the preliminary alternatives is subject to valid existing rights. This includes the rights of owners to have reasonable access to their existing private land inholdings as well as the rights of existing right-of-way (ROW) holders approved by the BLM or USDA Forest Service.

The BLM and the USDA Forest Service would collaborate with the BEC to appropriately incorporate a land management philosophy that emphasizes a holistic approach to BENM management that provides equity to Traditional Indigenous Knowledge and perspectives on the stewardship of the Bears Ears landscape. All action alternatives would give consideration to Traditional Indigenous Knowledge in the management of BENM and would include BENM-wide management to provide for the continued preservation not only of the physical landscape but also the cultural and spiritual landscape, including that which is visual and auditory. All action alternatives would include management actions to provide for and protect Tribal Nations' cultural, traditional, ceremonial, and subsistence uses. The agencies would collaborate with the BEC, its constituent Tribal Nations, and other Tribal Nations in the management of the cultural and spiritual landscape and all natural resources to ensure that Traditional Indigenous Knowledge is incorporated into management of the Bears Ears cultural landscape.

Finally, all alternatives would incorporate education and interpretation for the public regarding appropriate ways to recreate and engage in other activities while protecting BENM objects.

2.1.2. Alternative A: No Action Alternative

Alternative A, the No Action Alternative, represents existing management guided by management decisions in the 2020 ROD/MMPs, 2008 Monticello RMP, 2008 Moab RMP, and 1986 Manti-La Sal LRMP, as amended. Land use management direction in these plans guides BENM management to the extent that it is consistent with Proclamation 10285 and the and protection of BENM objects. Where management direction in these plans is inconsistent with Proclamation 10285, the proclamation controls.

2.1.3. Alternative B

Alternative B would provide the most permissive management for those discretionary actions that are compatible with protecting BENM objects. This alternative would focus on on-site education and interpretation and allow for the development of facilities to protect BENM objects.

2.1.4. Alternative C

Alternative C would allow discretionary actions if they are necessary to protect BENM objects. This alternative would focus on off-site education and interpretation and allow for limited development of facilities to protect BENM objects.

2.1.5. Alternative D

Alternative D would generally prioritize the continuation of natural processes by limiting or discontinuing discretionary uses. This alternative would minimize human-created facilities and management would emphasize natural conditions.

Areas selected for limiting or discontinuing discretionary uses were determined by evaluation of available data that informed the overall ecological condition of the landscape and known objects at risk (e.g., susceptibility of perennial water to degradation) across multiple lines of evidence. Data types used included but were not limited to the Assessment, Inventory, and Monitoring (AIM) Strategy (terrestrial and lotic), remote sensing, upland range trend, water quality/quantity (state and federal), and consultation with BLM/USDA Forest Service interdisciplinary team (IDT) members and subject matter experts. Data were initially evaluated at the hydrologic unit code (HUC) 10 watershed scale to identify areas of concern that were then adjusted based on management considerations (e.g., existing management boundaries, recently implemented habitat improvement projects [e.g., Vegetation Management Action Portal {VMAP} or fuels treatments], and minimizing new fencing). Methods used to identify areas of concern are described in Chapter 3 and Appendix K.

2.1.6. Alternative E

Alternative E maximizes the consideration and use of Tribal perspectives on managing the landscape of BENM. This alternative is meant to emphasize resource protection and the use of Traditional Indigenous Knowledge and perspectives on the stewardship of the Bears Ears landscape. This includes consideration of natural processes and seasonal cycles in the management of BENM and collaboration with Tribal Nations to incorporate those considerations into BENM day-to-day management. See Section 2.3 for information about the selection of Alternative E as the preferred alternative.

2.2. Alternatives Considered but Not Analyzed in Detail

When preparing an EIS, the BLM analyzes a range of reasonable alternatives, which are defined as those that are technically and economically feasible, while also satisfying the purpose and need of the proposed action. The grounds on which the BLM may eliminate a potential alternative from detailed analysis include, but are not limited to: 1) it does not respond to the purpose and need; 2) it is not technically or economically feasible; 3) it is not consistent with the overall policy objectives for the area; 4) its implementation is remote or speculative; 5) it is not substantively different in design from an alternative being analyzed in detail; or 6) it would have substantively similar effects as an alternative being analyzed in detail. The USDA Forest Service defines a reasonable alternative as one that meets the purpose and need and addresses one or more significant issues related to the proposed action. Per 36 CFR 220.5(e), because an alternative may be developed to address more than one significant issue, no specific number of alternatives is required or prescribed. Alternatives not considered in detail may include, among other things, those that do not meet the purpose and need, those that are technologically infeasible or illegal, or those resulting in unreasonable environmental harm. During the planning process, several alternatives were identified that were not carried forward because they did not meet the BLM and USDA Forest Service's criteria for alternatives to be analyzed in detail. The following describes the alternatives that the BLM and USDA Forest Service considered during the alternatives development process that were not carried forward for detailed analysis in the RMP/EIS:

- Any alternative that would modify the boundaries of BENM set forth by Proclamation 10285.
 - Rationale: The Antiquities Act authorizes only the President to establish or modify the boundaries of a National Monument. This alternative was not analyzed in detail because neither the BLM nor USDA Forest Service has authority to modify the boundaries of BENM established in Proclamation 10285.
- An alternative that incorporates all the management actions in the 2022 BEITC LMP.
 - Rationale: The agencies have incorporated management actions from the BEITC and the BEC into the action alternatives to the maximum extent possible consistent with laws and regulations, particularly Alternative E. As a result, an alternative that incorporates all the management action in the 2022 BEITC LMP would be substantially similar in design and be substantially similar in effects to Alternative E, as well as components of Alternatives B, C, and D.
- Alternatives aimed at increasing motorized access.
 - Rationale: Several commenters suggested the agencies consider and analyze increasing motorized access in BENM. Such alternatives were not carried forward for detailed analysis because they are inconsistent with management direction in Proclamation 9558, which is incorporated into Proclamation 10285. Specifically, Proclamation 9558 prohibits cross-country motorized vehicle use except for emergency or authorized purposes and prohibits the designation of new roads and trails for motorized vehicle use unless they are for the purposes of public safety or the protection of Monument objects. In other words, the agencies do not have discretion to increase motorized access within the Monument. As a result, alternatives that were aimed at increasing motorized access in the Monument were not carried forward for detailed analysis.
- Alternatives that prioritize multiple uses over protection of BENM objects.
 - Rationale: Section 302 of FLPMA states that public lands should be managed under the principles of multiple use and sustained yield "except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall

be managed in accordance with such law.” Proclamation 10285 dedicates the lands within BENM to a specific use, therefore the lands reserved within the Monument boundary must be managed in a manner that protects the objects for which the Monument has been designated. In other words, within BENM, typical multiple use management is superseded by the direction in Proclamation 10285 to protect Monument objects. Multiple uses are allowed only to the extent they are consistent with the protection of the objects within the Monument. Because an alternative that prioritizes multiple uses over the protection of BENM objects would be inconsistent with Proclamation 10285 and, therefore, Section 302 of FLPMA, it was not analyzed in detail.

- An alternative that excludes livestock grazing entirely.
 - Rationale: The BLM considered an alternative that would exclude livestock grazing from BENM; however, its implementation would be considered remote and speculative. Grazing impacts are generally site specific and not evenly distributed over the landscape, making causal factor determinations on a landscape scale difficult. The BLM reviewed monitoring data and remote sensing data to better understand land health and ecosystem function, identifying departed watersheds and departed vegetation and soil conditions. In these departed areas, the BLM would consider discontinuing livestock grazing under Alternative D; however, the monitoring data and remote sensing data did not suggest that grazing was incompatible with protecting Monument objects in all areas of BENM, making it unlikely the BLM would be able to justify selecting such an alternative. Under several alternatives, land health assessments and/or causal factor determinations would be completed in certain areas within given time frames and may be used to inform livestock grazing permit renewals. Where a categorical exclusion cannot be used to fully process a grazing permit, a “no grazing” alternative would be considered for in the NEPA document consistent with BLM Instruction Memorandum 2012-169. Analyzing a “no grazing” alternative within this EIS would involve broad landscape considerations of effects across nearly 1.36 million acres of BENM, whereas a site-specific analysis of “no grazing” during the permitting process would provide a more site-specific understanding of grazing’s effects on allotments, land health, and BENM objects.

2.3. Selection of the Preferred Alternative

Consistent with the BLM planning regulations (43 CFR 1610.4-7) and as part of the agencies’ commitment to an open and transparent planning process, the agencies are identifying Alternative E as the preferred alternative at the draft RMP/EIS stage. The agencies have identified Alternative E as the preferred alternative because it would emphasize Traditional Indigenous Knowledge and a holistic approach to stewardship of this sacred landscape that addresses tangible and intangible aspects of the Monument. Alternative E also incorporates both the Western science perspective and the cyclical nature of management including Indigenous circular ways of knowing and seasonality, as well as recognizes spiritual, cultural, and ancestral connections to the landscape and protects Indigenous traditional uses of the Monument.

In identifying the preferred alternative, the agencies evaluated how well each of the alternatives in the draft RMP/EIS would respond to the purpose and need for action and the guidance for the formulation of alternatives, as well as the effects of each of the alternatives relevant to the issues identified for detailed analysis. While collaboration with the BEC, other federal agencies, state and local governments, and other stakeholders has been critical in developing and evaluating alternatives, the designation of a preferred alternative remains the exclusive responsibility of the BLM and USDA Forest Service.

The identification of the preferred alternative does not constitute any commitment or decision by the agencies. After considering public comments, the agencies may identify a different preferred alternative in the Proposed RMP/Final EIS and may select a different alternative, or a blend of alternatives, in the Records of Decision (ROD). The Proposed RMP may also reflect changes and adjustments based on comments received on the draft RMP/EIS, feedback from cooperating agencies, new information, or changes in BLM or USDA Forest Service policies or priorities. Given that, Alternative E should be understood as the alternative that provides the most useful starting point from which to construct a Proposed RMP based on the analysis in this draft RMP/EIS. Ultimately, however, having the discretion to fashion the Proposed RMP from an alternative in its entirety or to combine aspects of the various alternatives presented in this draft RMP/EIS allows the agencies to select the management strategy that best accomplishes the purpose and need while protecting Monument objects.

2.4. Detailed Descriptions of the Alternatives

Section 2.4 provides detailed descriptions of the proposed alternatives, including goals, objectives, and management actions. Within the alternatives matrix below, management under Alternative A, or management under another alternative that is noted as the same as Alternative A, applies to the entire Decision Area, unless otherwise specified.

2.4.1. *Links to Alternatives*

Use the following hyperlinks to access the resource sections of the alternatives matrix.

Natural Environment

2.4.3 Geology and Minerals

2.4.4 Paleontological Resources

2.4.5 Soil Resources

2.4.6 Water Resources

2.4.7 Vegetation

2.4.8 Forestry and Woodlands

2.4.9 Lands with Wilderness Characteristics
(applies to BLM-administered lands only)

2.4.10 Special Designations

2.4.11 Wildlife and Fisheries

2.4.12 Special Status Species

2.4.13 Visual Resource Management, Night Skies,
and Soundscapes

Built Environment

2.4.14 Cultural Resources

2.4.15 Cross Cultural Education and Outreach

2.4.16 Air Quality

2.4.17 Fire Management

2.4.18 Health and Safety

2.4.19 Lands and Realty

2.4.20 Recreation and Visitor Services

2.4.21 Travel and Transportation Management

2.4.22 Livestock Grazing

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2.4.2. Management Actions Common to All Resources and All Alternatives

2.4.2.1. OVERARCHING MANAGEMENT

- All actions in BENM would be consistent with Proclamations 9558 and 10285 and the protection of BENM objects.
- Agencies would collaborate with BEC, or a comparable Tribal representative body, on the site-specific implementation-level management that follows this plan. This ongoing implementation is necessary for the BLM to manage BENM consistent with Proclamation 10285 and the protection of BENM objects.
- Agencies would collaborate with the BEC, or a comparable Tribal representative body, on future maintenance and/or amending of this plan as necessary. In particular, the agencies and the BEC would review (among other plan elements), lands with wilderness characteristics (LWC), Visual Resource Management (VRM), special conditions for wildlife, and areas open/closed to wood product use.
- Agencies would coordinate with the Monument Advisory Committee (MAC), as appropriate, to receive information and advice on future maintenance and/or amending of this plan, as well as in the site-specific implementation-level management that follows this plan.
- The agencies would prohibit collection of BENM objects and resources, including but not limited to rocks; petrified wood; fossils; plants; bones; parts of plants, animals, fish, insects, or other invertebrate animals; other products from animals; or other items from within BENM, except where the collection is specifically permitted under applicable BLM/USDA Forest Service authority or pursuant to the legal harvest of game (including shed antlers and horns), or the prohibition is inconsistent with the Religious Freedom Restoration Act or other applicable law. For example, casual collection would not be prohibited where such prohibition constitutes a substantial burden on religious practices.
- The entire area of BENM qualifies as a special area under 43 CFR 2932.5. In addition to being officially designated by Presidential order (Presidential Proclamations 9558 and 10285), the entire area consists of resources that require special management and control measures for their protection, including a renowned collection of cultural resources, many of which are sacred to several Tribal Nations. For NFS lands, BENM is a Statutorily Designated Area per 36 CFR 219.19.
- Agencies may issue closures, consistent with law, regulation, and policy, when effects are inconsistent with protecting objects, including, but not limited to, special status species populations, habitat, connectivity, forage, cultural resources, or prey base.
- Agencies would coordinate with state and local governments, as appropriate, to receive information and advice on future maintenance and/or amending of this plan, as well as in the site-specific, implementation-level management that follows this plan.

2.4.2.2. TRIBAL CO-STEWARDSHIP

- The BLM and USDA Forest Service would manage BENM in collaboration with the BEC (see Appendix C: Tribal Nations Collaboration Framework). As described in Proclamations 9558 and 10285, the Tribal Nations would inform management of the Monument, and the traditional and historical knowledge and special expertise of the BEC would be integrated into BENM management. The agencies' co-stewardship relationship with the BEC facilitates, enhances, and supplements coordination and cooperative management of the federal lands within BENM. The co-stewardship relationship respects but does not curtail, abrogate, or replace the agencies' obligations under applicable law and policy to consult with Tribal Nations—particularly the requirements to engage in government-to-government consultation and consultation pursuant to the NHPA.
- To ensure enhanced Tribal Nation engagement and collaboration in the management of BENM, the agencies would do the following:
 - Ensure that Tribal knowledge and local expertise is reflected in agency decision-making processes for BENM.
 - Engage on an ongoing basis in joint dialogue, knowledge sharing, and learning programs for agency managers and professional staff, Tribal officials, and other appropriate partners to address critical resource management, Tribal, and agency program priorities and to foster a shared awareness of the Tribal context of the landscape, including the need to protect both important and sacred Tribal uses and activities as well as Monument objects and other resources.
 - Provide the BEC opportunities to review and provide input on BLM and USDA Forest Service policy guidance for BENM prior to issuance.
 - Collaborate, consult, and engage regularly with the BEC on resource management priorities and joint management opportunities within the Monument as follows:
 - Meet annually to develop a joint annual work plan that would set priorities for the year based on available funding, including but not limited to critical research opportunities, a schedule of site visit(s), shared training, visitor management initiatives, volunteer opportunities, interpretive signage needs, and categories of activities and types of agency decisions for which the BEC may elect to provide input, such as authorizations regarding range improvements, developed recreation sites and areas, and SRPs.
 - Meet annually to review the BENM RMP/EIS and the status of implementation.
 - Meet quarterly to collaborate and consult on Tribal Nations' land management priorities, public land resource issues, opportunities for joint Tribal-federal program development, BEC participation in implementation-level decision-making processes, and landscape-level management issues and to provide awareness of upcoming federal actions and authorizations.
 - Ensure appropriate BEC engagement on agency decision-making by adhering to the following communication and review processes:
 - At least 15 days prior to initiating an implementation-level project in BENM, the agencies would provide initial notification to the BEC and provide an opportunity to collaborate via email. If the BEC responds within 15 days via email electing to participate in the coordination process, the agencies would provide a schedule that includes the time frames for the BEC to provide input as part of each internal review stage and before the final decision is issued. The agencies would provide notice to the BEC at least 15 days before each internal review stage and before the final decision is issued. If the BEC does not respond to the notification or declines to participate in the coordination process, the agencies may provide notice of the final decision 5 days before it is issued. The agencies and the BEC may agree to modify these time frames if they do not provide adequate time to ensure appropriate collaboration with the BEC in agency decision-making processes.

- If the BEC determines that more time is needed to provide feedback to the agencies than was provided in an established planning- or implementation-level decision-making schedule, they would provide the agencies timely notice, with an explanation of why more time is needed, and would propose a reasonable time frame to provide input. Although the agencies are not obligated to provide additional time, the agencies would endeavor to grant a reasonable extension if the delay would not place the agency in jeopardy of failing to meet a deadline imposed by law or this plan to issue the final decision.
- If the Authorized Officer (BLM)/Responsible Official (USDA Forest Service) decided not to incorporate specific recommendations timely submitted by the BEC in writing during the implementation-level decision-making process, they would provide the BEC written explanation at least 30 days prior to issuing the document on which the comments were provided (e.g., draft or final EA). Within 15 days of receiving the written explanation, the BEC may request a meeting with the BLM state director or USDA Forest Service regional forester, as appropriate, to discuss any disagreements with the Authorized Officer's/Responsible Official's explanation before the decision is finalized.
- Agencies would collaborate with the BEC and Tribal Nations to develop a Tribal Nations co-stewardship implementation-level plan to provide for specific co-stewardship relationships between the agencies, the BEC, and Tribal Nations. This plan would provide additional direction for several items included in the RMP/EIS, including some aspects of management identified in Section 2.4.15, Cross Cultural Education and Outreach, and Section 2.4.14, Cultural Resources. Additionally, the co-stewardship plan would address the following:
 - Opportunities for development of initiatives to cooperatively conduct land management programs concerning BENM
 - Opportunities for repatriating cultural resources and related data excavated or removed from federal lands
 - Placename changes for locales, resources, and spaces in BENM, including recommendations for placename changes to the U.S. Board on Geographic Names or National Register of Historic Places (National Register) to better honor Tribal stewardship of this landscape.
 - In collaboration with the BEC, agencies would establish a Fuelwood Working Group; the committee would create a framework for authorizing traditional wood cutting and wood harvesting in BENM according to Traditional Ecological Knowledge.
- Agencies would collaborate with the BEC and Tribal Nations on recreation and travel management planning, including but not limited to developing implementation-level recreation management plans, developing travel management plans (TMPs), managing use levels, and developing/maintaining infrastructure (see Appendix H: Travel Management Plan Criteria).
- Agencies would collaborate with the BEC and Tribal Nations when developing stipulations for discretionary actions including, but not limited to, seed and plant collection and permitted activities, as consistent with federal law and regulations.
- Tribal site visits and other methods to ensure collaboration on the ground should be planned as part of the management of BENM and implementation plans and actions. Resources and places on the landscape would not be considered separately from the landscape as a whole. The development of this plan would not preclude the incorporation of Tribal values and perspectives in all sections of this RMP/EIS.

2.4.2.3. INVENTORYING, MONITORING, SCIENCE, AND INDIGENOUS KNOWLEDGE

- Agencies would collaborate with the BEC to ensure that Tribal Nations' ways of knowing are given equal consideration with knowledge derived from a Western scientific paradigm by incorporating Tribal expertise when designing and implementing management in BENM.
- Agencies would collaborate with the BEC, Tribal experts recognized by Tribal Nations, and applicable federal and state agencies, in inventorying and monitoring BENM resources to develop a greater understanding of resource status and to provide for effective management. The agencies would collaborate on strategies with the BEC on inventorying and monitoring including, but not limited to, the following programs:
 - Wildlife habitat (including but not limited to goshawks, raptors, migratory birds, aquatic species, and bighorn sheep)
 - Soils
 - Water (e.g., springs)
 - Vegetation
 - VRM (e.g., viewsheds and dark night skies) and soundscapes
 - Recreation (e.g., visitor use)
 - Culturally important plants and animals
 - Paleontological resources
 - Air quality (e.g., dust)
- Agencies would collaborate with the BEC to facilitate increased scientific research and increased understanding of Traditional Indigenous Knowledge to further understanding of BENM objects.
- Agencies would collaborate with the BEC to develop and maintain a BENM science plan that directs the administration of a science program and is informed by Traditional Indigenous Knowledge.
- Agencies would collaborate with the BEC on proposals for scientific research.
- Agencies would collaborate with the BEC to develop data-sharing agreements, including ownership of the data, to preserve sensitive information regarding BENM resources including but not limited to ethnographic research and TCP surveys, and natural resources data on quality and conditions of water, plants, animals, birds, air, land use, a trails inventory, and other recreation data.

NATURAL ENVIRONMENT

2.4.3. Geology and Minerals

2.4.3.1. GOALS AND OBJECTIVES

- Manage BENM for the protection and preservation of all geological features and resources.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.3.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Ensure that adequate reclamation of disturbed areas is accomplished consistent with the protection of BENM objects.
- Casual collection of minerals in BENM is prohibited except where inconsistent with the Religious Freedom Restoration Act and other applicable laws. Casual collection of minerals would not be prohibited where such prohibition constitutes a substantial burden on religious practices.

2.4.3.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-2. Alternatives for Geology and Minerals

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Subject to valid existing rights, BLM and NFS lands within BENM are withdrawn from location, entry, and patent under the Mining Law of 1872 and from disposition under all laws relating to mineral and geothermal leasing.</p> <p>The agencies would, to the greatest extent possible, and in accordance with applicable law, manage any operations that occur under the mineral leasing laws pursuant to valid existing rights in a manner that protects and mitigates impacts to the protection of BENM objects.</p> <p>The agencies would coordinate with UDOGM in implementing the Abandoned Mine Reclamation Program to close access and clean up waste associated with abandoned mine lands (AMLs).</p> <p>Agencies would work with the BEC and Tribal Nations to identify geological hazards that pose a problem to public health and safety and partner with appropriate agencies as applicable for remediation.</p> <p>Agencies would coordinate with the BEC and Tribal Nations to identify and preserve unique geological features and/or geological features of spiritual significance. This could include closing areas with the features on a seasonal basis to protect them or to provide for traditional uses or ceremonies.</p>	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>Subject to valid existing rights, BLM and NFS lands within BENM are withdrawn from location, entry, selection, or patent under the Mining Law of 1872 and from disposition under all laws relating to mineral and geothermal leasing.</p> <p>The agencies, in collaboration with the BEC, would, to the greatest extent possible, and in accordance with applicable law, manage any operations that occur under the mineral leasing laws pursuant to valid existing rights in a manner that protects and mitigates impacts to the protection of BENM objects.</p> <p>The agencies would collaborate with the BEC and UDOGM in implementing the Abandoned Mine Reclamation Program to close access and clean up waste associated with AMLs.</p> <p>Agencies would work with the BEC and Tribal Nations to identify geological hazards that pose a risk to public health and safety and partner with appropriate agencies as applicable for remediation.</p> <p>Agencies would collaborate with the BEC and Tribal Nations to identify and preserve unique geological features and/or geological features of spiritual significance. This could include closing areas with these features on a seasonal basis to protect them or to provide for traditional uses or ceremonies.</p>

2.4.4. Paleontological Resources

2.4.4.1. GOALS AND OBJECTIVES

- Protect paleontological resources in BENM in collaboration with the BEC and Traditional Indigenous Knowledge regarding the value of these resources to the BENM cultural landscape.
- Foster public awareness and appreciation of the paleontological heritage.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.4.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would collaborate with the BEC to provide for the protection of paleontological resources and the protection of BENM objects while providing public access to those resources for scientific education and study. Agencies would protect paleontological resources from the harmful impacts of livestock grazing, construction, and recreation.
- Agencies would collaborate with the BEC to provide for traditional and/or cultural uses of paleontological resources, consistent with applicable law.
- Identify, evaluate, study, interpret, and protect paleontological resources in BENM and promote and facilitate scientific investigation of fossil resources.
- All research, inventories, and monitoring of paleontological resources would be conducted in accordance with applicable federal laws, regulations, and policy, and, where possible, Tribal Nations’ policies and protocols and in collaboration with the BEC.
- Develop a paleontological resource implementation plan in collaboration with the BEC within 5 years.

2.4.4.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-3. Alternatives for Paleontology

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs All research, inventories, and monitoring of paleontological resources would be conducted in accordance with applicable laws, regulations, and policy.	See Management Actions Common to All Action Alternatives (Section 2.4.4.2) and Geology and Minerals Management Actions Common to All Action Alternatives (Section 2.4.3.2).	See Management Actions Common to All Action Alternatives (Section 2.4.4.2) and Geology and Minerals Management Actions Common to All Action Alternatives (Section 2.4.3.2).	See Management Actions Common to All Action Alternatives (Section 2.4.4.2) and Geology and Minerals Management Actions Common to Action Alternatives (Section 2.4.3.2).	See Management Actions Common to All Action Alternatives (Section 2.4.4.2) and Geology and Minerals Management Actions Common to All Action Alternatives (Section 2.4.3.2).
Per 2020 ROD/MMPs Casual collection of petrified wood is prohibited in BENM except where such prohibition constitutes a substantial burden on religion in accordance with the Religious Freedom Restoration Act and other applicable law.	See Management Actions Common to All Action Alternatives (Section 2.4.4.2)	See Management Actions Common to All Action Alternatives (Section 2.4.4.2).	See Management Actions Common to All Action Alternatives (Section 2.4.4.2).	See Management Actions Common to All Action Alternatives (Section 2.4.4.2).
Per 2020 ROD/MMPs As funding is available, the agencies would conduct paleontological resources inventories in a manner that complies with the Paleontological Resources Preservation Act. Priorities for inventory include the following (in this order): <ul style="list-style-type: none"> • Group 1: Areas that receive heavy public use and/or those that lack intensive inventory in relation to current standards • Group 2: Areas that need records clarification or updating • Group 3: Areas with little or no previous inventory These inventory priorities may change in response to changing conditions; uses and input from researchers, educators, and Tribes; or other changed circumstances such as changes in travel management implementation guidelines. Inventory and site documentation would conform to the standards listed in BLM Manual 8270; the agencies would also allow the use of additional field recording protocols in response to research goals and designs, special management, and/or other needs as identified in the future.	As funding is available, agencies would collaborate with the BEC to gather information on the importance of paleontological resources to Tribal Nations, including Traditional Indigenous Knowledge, documentation aspects, and recognition of important traditional use areas. Agencies would also collaborate with the BEC on the prioritization of information gathering.	Same as Alternative B.	Same as Alternative B.	As funding is available, the agencies would collaborate with the BEC to gather information on the importance of paleontological resources to Tribal Nations, where appropriate, including Traditional Indigenous Knowledge. The agencies would use Traditional Indigenous Knowledge regarding paleontological resources as a management approach, together with Western science. Agencies would also collaborate with the BEC on the prioritization of information gathering from Tribal Nations.
Per 2020 ROD/MMPs Collection of paleontological objects would be by permit only.	See Section 2.4.2.1, Overarching Management.	See Section 2.4.2.1, Overarching Management.	See Section 2.4.2.1, Overarching Management.	See Section 2.4.2.1, Overarching Management.
No similar action.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Casting of paleontological resources would be by permit only.
Per 2020 ROD/MMPs To protect paleontological resources, no casual fossil collecting would be allowed within BENM.	See Management Actions Common to All Alternatives (Section 2.4.4.2).	See Management Actions Common to All Alternatives (Section 2.4.4.2).	See Management Actions Common to All Alternatives (Section 2.4.4.2).	See Management Actions Common to All Alternatives (Section 2.4.4.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs Conduct on-site survey for paleontological resources in PFYC Classes 4 and 5 areas prior to implementing any surface-disturbing activities.	Prior to implementing any discretionary actions that could impact paleontological resources, on-site surveys would be conducted for paleontological resources in areas classified as PFYC Classes 3, 4, and 5 and U (Unknown). The Authorized Officer (BLM)/Responsible Official (USDA Forest Service) has the discretion to modify these survey requirements if they determine that the modification would continue to protect BENM objects.	Same as Alternative B.	Same as Alternative B.	Prior to implementing any discretionary actions that could impact paleontological resources, on-site surveys would be conducted for paleontological resources. Areas that contain or are likely to contain vertebrate or plant fossils and their traces would be identified and evaluated prior to implementing and discretionary actions. The Authorized Officer (BLM)/Responsible Official (USDA Forest Service) has the discretion to modify these survey requirements if they determine that the modification would continue to provide for the proper care and management of BENM objects. This determination should include collaboration with the BEC.
Per 2020 ROD/MMPs Surface-disturbing activities would avoid or minimize impacts to paleontological resources to the degree practicable. Where avoidance is not practicable, appropriate mitigation to reduce impacts would be developed based on site-specific survey information.	Surface-disturbing activities would avoid or minimize impacts to paleontological resources to the degree practicable. Where avoidance is not practicable, appropriate mitigation to protect paleontological resources would be developed based on site-specific survey information.	Same as Alternative B.	Same as Alternative B.	Protect and preserve paleontological resources. Restoration of paleontological resources should only be done in collaboration with the BEC, due to Traditional Ecological Knowledge requiring that paleontological resources be left undisturbed. Any work done involving fossils should not be extractive; fossil resources would not be extracted from BENM.
Per 2020 ROD/MMPs If surveys indicate presence of significant paleontological resources on trails and access points, the BLM and USDA Forest Service would close or reroute trails and access points for both casual and permitted use.	If surveys indicate presence of significant paleontological resources, the BLM and USDA Forest Service would take appropriate action to avoid impacts to those resources.	Same as Alternative B.	Same as Alternative B.	If surveys indicate presence of significant paleontological resources, the BLM and the USDA Forest Service, in collaboration with the BEC, would take appropriate action, to avoid impacts to those resources. This may require the construction of physical barriers or other methods to separate the public from paleontological resources.
Per 2020 ROD/MMPs If trails and access points cannot be rerouted, the BLM and USDA Forest Service would provide specific education to climbers and hikers on best climbing practices to avoid or minimize impacts to paleontological resources.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs Shay Canyon Hiking trails would continue to be open to casual use. Management and development of hiking paths and trails would be consistent with maintaining BENM objects, including protection of significant paleontological resources. If monitoring indicates impacts to significant paleontological resources, the BLM may harden, reroute, or close trails as necessary to protect sites. The BLM would provide education or interpretation to inform recreational users of the importance of not impacting paleontological resources.	Shay Canyon Hiking trails would continue to be open for public use. Management and development of hiking paths and trails would be consistent with protecting BENM objects, including protection of significant paleontological resources. If monitoring indicates impacts to significant paleontological resources, the BLM may harden, reroute, or close trails as necessary to protect sites. The BLM would provide education or interpretation to inform recreational users of the importance of not impacting paleontological resources. Trails could be closed seasonally to allow for resource rest and/or traditional use. Seasonal closures would be determined in coordination with the BEC and Tribal Nations.	Same as Alternative B.	Same as Alternative B with the following exception: • No new trail development would be allowed in Shay Canyon.	Management of hiking trails in Shay Canyon, or in any other areas with significant paleontological resources as defined by the agencies and in collaboration with the BEC, would be consistent with maintaining BENM objects, including protection of significant paleontological resources. If monitoring indicates impacts to significant paleontological resources, the agencies, in collaboration with the BEC, may harden, reroute, or close trails as necessary to protect sites. No new trail development would be allowed in Shay Canyon or in any other areas with significant paleontological resources. Education or interpretation would be provided to inform recreational users of the importance of protecting paleontological resources. Seasonal closures of trails and access areas to allow for resource rest would be determined in collaboration with the BEC.
Per 2008 Monticello RMP Recreational collectors may collect and retain reasonable amounts of common invertebrate and plant fossils for personal, noncommercial use. Surface disturbance must be negligible, and mechanized tools may not be used.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Collection of invertebrate and plant fossils and casting of fossils would require a permit.	See Management above.	See Management above.	See Management above.	See Management above.
Per 2008 Monticello RMP Vertebrate fossils may be collected only under a permit issued by the Authorized Officer (BLM)/Responsible Official (USDA Forest Service) to qualified individuals. Vertebrate fossils include bones, teeth, eggs, and other body parts of animals with backbones such as dinosaurs, fish, turtles, and mammals. Vertebrate fossils also include trace fossils such as footprints, burrows, and dung.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2008 Monticello RMP Casting of vertebrate fossils, including dinosaur tracks, would be prohibited unless allowed under a scientific/research permit issued by the BLM Utah State Office.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Fossils collected under a permit remain the property of the federal government and must be placed in a suitable repository (such as a museum or university) identified at the time of permit issuance.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Lands identified for exchange would be evaluated to determine whether such actions would remove important fossils from federal ownership.	See Section 2.4.19, Lands and Realty.	See Section 2.4.19, Lands and Realty.	See Section 2.4.19, Lands and Realty.	See Section 2.4.19, Lands and Realty.
Per 2008 Monticello RMP In areas where surface disturbance, either initiated by the BLM or by other land users, may threaten substantial or noteworthy fossils, the BLM would follow its policy, per the <i>BLM Manual and Handbook 8270</i> to assess any threat and mitigate damage.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Where scientifically noteworthy fossils are threatened by natural hazards or unauthorized collection, the BLM would work with permittees and other partners to salvage specimens and reduce future threats to resources at risk.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Conduct on-site evaluation of surface-disturbing activities for all PFYC Class 5 areas and minimize impacts to paleontological resources to the degree practicable. Evaluation would consider the type of surface disturbance proposed, and mitigation would be developed based on site-specific information.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

2.4.5. Soil Resources

2.4.5.1. GOALS AND OBJECTIVES

- Promote sustainable soil functions and interactions with all other resources on the Monument and maintain or improve soils to a suitable level of functionality, with soil properties appropriate to site-specific climate and landform and to the total functional composition of soils on the Monument.
- Protect soil resources and all other resources that depend on the soil as part of the healing landscape of the Monument.
- Protect highly sensitive soils (highly susceptible to erosion) and biological soil crusts (BSCs).
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.5.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would collaborate with the BEC to protect soil resources and provide for the long-term sustainability of soil.
- Agencies would collaborate with the BEC to maintain and/or restore overall watershed health and water quality conditions by reducing erosion, stream sedimentation, and salinization of water and to ensure ecological diversity and sustainability.
- Agencies would manage public lands consistent with the Colorado River Salinity Control Act and any other relative legislation or Traditional Indigenous Knowledge-based standards, as identified in collaboration with the BEC.

2.4.5.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-4. Alternatives for Soil Resources

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs</p> <p>For slopes greater than 40 percent, no surface disturbance would be allowed unless it is determined that other placement alternatives are not practicable or when surface-disturbing activities (e.g., trail construction) are necessary to reduce or prevent soil erosion. In those cases, an erosion control plan would be required for review and approval by the BLM and USDA Forest Service prior to permitting the activity.</p>	<p>If new discretionary actions cannot be avoided on slopes between 21% and 40%, as applicable, an erosion control plan would be required. The plan must be approved by the agencies prior to construction and maintenance.</p> <p>No surface-disturbing activities would be allowed on slopes greater than 40% unless consistent with the protection of BENM objects.</p> <p>If SMUs indicate that discretionary actions are within areas with sensitive soils, consider further restricting activities to assure control of soil erosion within acceptable levels.</p> <p>Protect snow courses from site modification.</p>	<p>If new discretionary actions cannot be avoided on slopes between 21 percent and 35 percent, as applicable, an erosion control plan would be required. The plan must be approved by the agencies prior to construction and maintenance.</p> <p>No discretionary actions would be allowed on slopes greater than 35 percent unless consistent with the protection of BENM objects.</p> <p>Protect snow courses from site modification.</p>	<p>If new discretionary actions cannot be avoided on slopes between 21 percent and 30 percent, as applicable, an erosion control plan would be required. The plan must be approved by the agencies prior to construction and maintenance.</p> <p>No discretionary actions would be allowed on slopes greater than 30 percent unless necessary to protect BENM objects.</p> <p>Protect snow courses from site modification.</p>	<p>If discretionary actions cannot be avoided on slopes between 21 percent and 30 percent, an erosion control plan would be required. The plan must be approved by the agencies, prior to construction and maintenance; agencies would collaborate with the BEC regarding the discretionary action. The erosion control plan would include the following:</p> <ul style="list-style-type: none"> • An erosion control strategy. • An agency-approved survey and design of the erosion control plan • No surface-disturbing activities would be allowed on slopes greater than 30 percent unless necessary to protect BENM objects. <p>Protect snow courses from site modification.</p>
No similar management.	No similar management.	No similar management.	No similar management.	Traditional Indigenous Knowledge and Tribal policies and guidelines, peer-reviewed literature based on the best available Western science, and best management practices would be applied to restore soil crusts.
No similar management.	No similar management.	No similar management.	No similar management.	Maintain or improve soil quality and long-term soil productivity using culturally led standards, identified in collaboration with the BEC, designed to benefit natural ecosystems, native species, and important relationships between water and soil.
No similar management.	Agencies would collaborate with the BEC in identifying areas with BSCs and classifying those crusts to best protect them. These protections could include seasonal closures of areas to visitation during drought periods and ceremonially and traditionally important times of the year.	Same as Alternative B.	Same as Alternative B.	Agencies would collaborate with the BEC in identifying areas with BSCs and classifying those crusts to best protect them. These protections could include seasonal closures of areas to visitation during drought periods and ceremonially and traditionally important times of the year or permanent closures of areas with high BSC density.
<p>Per 1986 Manti-La Sal LRMP</p> <p>Soil and Water Resource Inventories</p> <ul style="list-style-type: none"> • Complete appropriate order of soil and water resource inventories to provide data for USDA Forest Service activities and uses. • Meet the National Cooperative Soil Survey Standards. • Forest Service Manual 2530.4.43 and Forest Service Handbook 2509.16. • Protect snow courses from site modification. 	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
<p>Per 1986 Manti-La Sal LRMP</p> <p>Soil Resource Management</p> <ul style="list-style-type: none"> • Maintain or improve soil productivity and watershed qualities within the ecological site capabilities. • Provide soil resource inventories, interpretations, and evaluation at the appropriate intensity level for projects which could adversely affect the soil resource or where the success or failure of the project depends on soil management. • Minimize adverse, human-caused impacts to the soil resource, including accelerated erosion, compaction, contamination, and displacement. 	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

2.4.6. Water Resources

2.4.6.1. GOALS AND OBJECTIVES

- Protect and restore water resources, including riparian areas, wetlands, springs, and seeps. Collaborate with the BEC in the determination of appropriate restrictions or improvements to water resources, as necessary to protect BENM objects.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.6.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Manage riparian and wetland resources for PFCs; manage water resources for quality and quantity.
- Maintain and enhance water quantity and quality, the desired mix of vegetation types, structural stages, and landscape/riparian/watershed function to protect BENM objects. Conduct comprehensive monitoring to track water quality conditions.
- Manage riparian areas to ensure stream channel morphology and functions are appropriate to the local soil type, climate, and landform. Ensure ecological diversity, stability, and sustainability, including maintaining the desired mix of vegetation types and structural stages. Provide for native and special status plant, fish, and wildlife habitats, and traditional, cultural, and ceremonial uses of water on BENM.
- Collaborate with the BEC to develop a groundwater/surface water technical study and monitoring plan, including, but not limited to, studies related to pumping impacts, water well production rates, water levels in water wells, and triggers for adaptive management, if needed, to protect BENM objects.
- Complete a comprehensive spring, seep, and water resources inventory of BENM. Collaborate with the BEC to protect properly functioning springs and restore and protect springs that are nonfunctional and/or functional-at risk.
- Pursue and quantify federally reserved and other water rights where possible for springs and water resources that meet Public Water Reserve criteria to protect BENM objects.
- Conduct a groundwater study on the Cedar Mesa Sandstone and N Aquifers to better understand characteristics, current conditions, recharge areas, recharge rates, groundwater budget (inflow vs. outflow), travel time, and springs.
- Collaborate with the BEC and Tribal Nations to reclaim disturbed soils to avoid impacts to the protection of BENM objects, including riparian areas and aquatic ecosystems.
- Agencies would collaborate with the BEC in managing for water flow (quantity and timing) to maintain stable and stream channels and habitat function.
- Agencies would implement the management actions for water quality per the *Utah Statewide Nonpoint Source Pollution Management Plan* (UDEQ 2013).
- Agencies would collaborate with the BEC to incorporate additional water quality standards in the management of BENM as appropriate and consistent with federal law.
- In collaboration with the BEC, manage watersheds and natural catchments to facilitate groundwater recharge.
- Collaborate with the BEC to develop a spring revitalization program, protect properly functioning springs, and restore and protect springs where riparian conditions are nonfunctional and/or functional-at risk or water quality conditions are degraded from impacts using implementable protection measures.
- Support traditional uses of springs/seeps and riparian areas on BENM for Tribal Nations, consistent with the protection of Monument objects.
- For the portions of BENM that include the Natural Bridges National Monument groundwater protection zone (GPZ), adopt management actions defined in the Natural Bridges National Monument GPZ plan.
- Follow management recommendations listed in the Utah Division of Water Quality (UDWQ) total maximum daily load (TMDL) reports on streams that are not meeting state water quality standards to improve water quality conditions.
- Adhere to Utah Division of Drinking Water restrictions on activities within public Drinking Water Source Protection zones (DWSP zones).
- Protect culinary water sources (water quality and water quantity) as defined by the EPA.

2.4.6.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-5. Alternatives for Water Resources

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs Dispersed recreation management: • Limit use where the riparian area is being unacceptably damaged.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Dispersed recreation management: • Limit use where monitoring indicates that the riparian area or water quality conditions are being impacted by recreational activities.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
No similar action.	Limit dispersed camping areas in or near riparian areas or water sources if uses related to camping are determined to be a causal factor in adverse impacts to a surface waterbody, water quality conditions, and/or riparian functions. Limitations would be those required to maintain water quality and riparian function.	Close dispersed camping areas in or near riparian areas or water sources if uses related to camping are determined to be a causal factor in adverse impacts to a surface waterbody, water quality conditions, and/or riparian functions.	Same as Alternative E.	Close dispersed camping areas near surface waterbodies if camping is determined to be a causal factor in impacts to a surface waterbody and/or riparian functions.
Per 2020 ROD/MMPs Minimize surface-disturbing activities in riparian areas that alter vegetative cover, result in stream channel instability or loss of channel cross sectional area, or reduce water quality, unless the action is designed for long-term benefits to riparian, wetland, or aquatic habitats (e.g., side channel restoration).	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs Water quality management: <ul style="list-style-type: none"> Vegetate disturbed soils in sites where adverse impacts would occur according to the following priorities: <ul style="list-style-type: none"> Aquatic ecosystems Riparian ecosystems 	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).
Per 2020 ROD/MMPs Reduce tamarisk, Russian olive, and other woody invasive species where appropriate using allowable vegetation treatments (approximately 5,000 acres would be treated over the life span of the plan). Reseed treatment areas, when appropriate, to avoid erosion damage or the re-establishment of invasive species. Additionally, reduce herbaceous invasive species where appropriate.	The agencies would collaborate with the BEC to reduce tamarisk, Russian olive, and other woody invasive species where appropriate. Reseed treatment areas with native plants, when appropriate, to avoid erosion damage or the reestablishment of invasive species. Additionally, reduce herbaceous invasive species where appropriate.	Same as Alternative B.	Same as Alternative B.	The agencies would collaborate with the BEC to reduce tamarisk, Russian olive, other woody or herbaceous invasive species, and other harmful invasive species and/or noxious weeds identified in collaboration with the BEC, where appropriate, using minimally invasive vegetation treatments. Reseed treatment areas with native plants to avoid erosion damage or the re-establishment of invasive species. All treatments would be implemented on a seasonal basis determined in collaboration with the BEC.
Per 2020 ROD/MMPs Floodplains and riparian/aquatic areas are as follows: <ul style="list-style-type: none"> Subject to fire suppression if necessary to protect riparian habitat. Excluded from private and/or commercial use of woodland products, except for Tribal Nations' traditional purposes as determined on a site-specific basis; limited on-site collection of dead wood for campfires is allowed, as described in Section 2.17 of the 2020 ROD/MMPs. Available for habitat, range, and watershed improvements and vegetation treatments described in <i>Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement</i> (BLM 2007a). Excluded from surface disturbance by mechanized or motorized equipment (except as allowed above) and from structural development (unless there is no practical alternative and/or the development would enhance riparian/aquatic values). 	Floodplains and riparian/aquatic areas are as follows: <ul style="list-style-type: none"> Subject to fire suppression if necessary to protect riparian habitat. Excluded from private and/or commercial use of wood products, except where inconsistent with the Religious Freedom Restoration Act and other applicable laws. Private collection of wood products would not be prohibited where such prohibition constitutes a substantial burden on religious practices. Available for habitat, watershed improvements, and vegetation treatments designed for long-term benefits to riparian, wetland, or aquatic habitats (e.g. side channel restoration, invasive plant removal, process-based restoration). 	Same as Alternative B with the addition that floodplains and riparian/aquatic areas are as follows: <ul style="list-style-type: none"> Excluded from surface disturbance by mechanized or motorized equipment and from structural development unless to protect BENM objects (e.g., habitat restoration). 	Same as Alternative C.	Floodplains and riparian/aquatic areas are as follows: <ul style="list-style-type: none"> Subject to fire suppression if necessary to protect riparian habitat. Excluded from private and/or commercial use of wood products, except where inconsistent with the Religious Freedom Restoration Act and other applicable laws. Private collection of wood products would not be prohibited where such prohibition constitutes a substantial burden on religious practices. Excluded from surface disturbance by mechanized or motorized equipment and from structural development. All treatments would be implemented on a seasonal basis determined in collaboration with the BEC and Tribal Nations.
Per 2020 ROD/MMPs Cottonwood and willow harvest would be allowed for Tribal Nations' ceremonial uses through a permit system. Restrictions on this harvest would be implemented as necessary to achieve or maintain PFC.	Cottonwood and willow harvest would be allowed for Indigenous traditional or ceremonial uses only and would be managed through authorizations as follows: <ul style="list-style-type: none"> When removing hazard trees from developed sites, agencies would collaborate with the BEC and Tribal Nations to provide those trees for ceremonial use. No cutting is authorized within developed sites or areas. Cottonwood harvesting is limited to 0.25 cord per person per year. Willow harvesting is limited to 200 stems per person per year. Agencies would collaborate with the BEC to implement modifications to these restrictions as necessary to provide 	Same as Alternative B.	Same as Alternative B.	Harvest of cottonwood, willow, and other traditionally used plants for ceremonial use would be allowed through notification of use through a point of contact and managed as follows: <ul style="list-style-type: none"> When removing hazard trees from developed sites, agencies would coordinate with the BEC and Tribal Nations to provide those trees for ceremonial use. No cutting would be allowed for shade canopies and within developed sites or areas. Cottonwood harvesting is limited to 0.25 cord per person per year and willow harvesting is limited to 200 stems per person per year.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
	for Tribal traditional or ceremonial uses while protecting BENM objects.			<ul style="list-style-type: none"> Agencies would collaborate with the BEC to implement modifications to these restrictions as necessary to provide for Tribal traditional or ceremonial uses while protecting BENM objects.
Per 2020 ROD/MMPs Avoid or limit surface disturbance DWSP zones.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Manage discretionary uses to protect DWSP zones.
Per 2020 ROD/MMPs Riparian, floodplain, and wetland management: <ul style="list-style-type: none"> Prior to implementation of project activities, delineate and evaluate riparian areas and or wetlands that may be impacted. Project-specific impacts to riparian areas, floodplains, and wetlands would be analyzed at the site-specific level, and mitigation measures would be developed and implemented as necessary to prevent unnecessary and undue resource degradation. 	Prior to implementation of discretionary actions, map and evaluate riparian areas and/or wetlands that may be impacted. Discretionary actions would be designed to protect riparian areas, wetlands, and water resources.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B, except discretionary actions would be considered in collaboration with the BEC. Project-specific impacts to riparian areas, floodplains, and wetlands would be analyzed at the site-specific level.
Per 2020 ROD/MMPs For both BLM-administered and NFS lands, no new surface-disturbing activity would be allowed within active floodplains or within 100 meters (approximately 330 feet) of riparian areas along perennial and intermittent springs and streams unless it meets at least one of the following exceptions: <ul style="list-style-type: none"> The activity is a vegetation treatment that does not impair riparian function. The activity is related to development of recreational or range infrastructure that does not impair riparian function. It can be shown that all long-term impacts can be fully mitigated. The activity would benefit the riparian area. It can be shown that there are no practical alternatives and that all long-term impacts can be fully mitigated. 	No new discretionary action that alters vegetative cover, results in stream channel instability or loss of channel cross sectional area, or reduces water quality would be allowed within the 100-year floodplains or within 330 feet of springs, riparian areas, and intermittent and perennial streams unless it meets at least one of the following exceptions: <ul style="list-style-type: none"> The activity is a vegetation treatment that does not impair overall riparian function in a system. The activity is related to development of recreational or range infrastructure that does not impair riparian function. It can be shown that all long-term impacts can be fully mitigated. The action is designed for long-term benefits to riparian, wetland, or aquatic habitats (e.g., side channel restoration). It can be shown that 1) there are no practical alternatives, and 2) the activity is consistent with the protection of BENM objects. 	Same as Alternative B.	Same as Alternative B.	No discretionary actions that alter vegetative cover, result in stream channel instability or loss of channel cross sectional area, or reduce water quality would be allowed within 100-year floodplains or within 0.5 mile of riparian areas and along perennial and intermittent springs and streams unless absolutely necessary to protect BENM objects.
Per 2020 ROD/MMPs If monitoring determines that a permitted activity is a causal factor in riparian areas functional-at risk or nonfunctional, steps would be taken to mitigate the impacts of that activity or temporarily restrict the activity, or, if necessary, the riparian area would be closed to that activity to provide for restoration and maintenance of riparian area PFC. In those cases where there are closures, those closures would be lifted if changes in the permitted activity provide for restoration and maintenance of riparian area PFC.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	If monitoring determines that a permitted activity is a causal factor in riparian areas functional-at risk or nonfunctional, steps would be taken on a case-by-case basis to mitigate the impacts of that activity or temporarily restrict the activity, or, if necessary, the riparian area would be closed seasonally to that activity to provide for rest, restoration, and maintenance of riparian area PFC. In those cases where there are closures, those closures would be lifted if changes in the permitted activity provide for restoration and maintenance of riparian area PFC. Time periods for closure would be determined in collaboration with the BEC.
Per 2020 ROD/MMPs Requirements for a hydrologic study would be determined at the implementation level based on groundwater levels and geological conditions. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs and ensure that any authorized withdrawals would provide for the proper care and management of BENM objects.	Require a hydrologic study for all proposed groundwater withdrawals within 0.25 mile of seeps, springs, water wells, public water reserves, and other groundwater-dependent ecosystems. Do not authorize land uses for water withdrawals that could affect groundwater for seeps and springs and ensure that any authorized withdrawals would provide for the protection of BENM objects. This study would be conducted by an agency hydrologist or other qualified groundwater hydrologist to determine appropriate restrictions or limitations needed to protect existing water wells; to avoid compounding groundwater depletion, impacting groundwater recharge; and to protect spring flows and spring-fed stream flows.	Same as Alternative B, with the exception that it would apply within 0.5 mile of seeps, springs, water wells, public water reserves, and other groundwater-dependent ecosystems and in all Cedar Mesa Sandstone recharge areas.	No new groundwater withdrawals would be permitted on BENM unless they are proposed specifically to protect BENM objects and/or Tribal Nations' traditional uses.	In collaboration with the BEC, new water withdrawals or diversions would not be authorized unless necessary to ensure the protection of BENM objects. Require a hydrologic study for all proposed groundwater withdrawals.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs Conduct vegetation treatments in riparian areas to remove nonnative vegetation, including tamarisk and Russian olive.	See Management Actions Common to All Action Alternatives (Section 2.4.7, Vegetation).	See Management Actions Common to All Action Alternatives (Section 2.4.7, Vegetation).	See Management Actions Common to All Action Alternatives (Section 2.4.7, Vegetation).	See Management Actions Common to All Action Alternatives (Section 2.4.7, Vegetation).
Manage riparian resources for PFC, which is described as the presence of adequate vegetation, landforms, or large woody debris, in accordance with the Utah Standards for Public Rangeland Health and Guidelines for Recreation Management for BLM Lands in Utah and with the Grazing Guidelines for Grazing Management (BLM 1997, 2007b).	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Mitigation to reduce impacts to floodplains and riparian areas include the following: (from <i>Standards for Public Land Health and Guidelines for Recreation Management for BLM Lands in Utah</i> [BLM 2007b] and BLM Riparian Manual 1737): <ul style="list-style-type: none">• Where feasible and consistent with user safety, developed travel routes would be located/relocated away from sensitive riparian/wetland areas.• Camping in riparian areas would be avoided and must be managed, monitored, and modified as conditions dictate to reduce vegetation disturbance and sedimentation.• Stream crossings would be limited in number and dictated by the topography, geology, and soil type. Design any necessary stream crossings to minimize sedimentation, soil erosion, and compaction (minimize longitudinal routes along stream banks, design crossings perpendicular to the stream).• Where necessary, control recreational use by changing the location or kind of activity, season, intensity, distribution, and/or duration.• Grazing actions to meet riparian objectives include vegetation use limits, fencing, herding, change of livestock class, temporary closures, change of season, and/or alternate development or relocation of water sources.• Any water diversions from riparian areas by the BLM or non-BLM entities would be designed and constructed to protect ecological processes and functions. Implement weed management stipulations and education to reduce spread of noxious weeds along stream corridors.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Limit activities in riparian areas, as necessary, to achieve and maintain PFC.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Grazing actions to meet riparian objectives can include fencing, herding, change of livestock class, temporary closures, and/or change of livestock season of use.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Preclude surface-disturbing activities within 100-year floodplains and within 100 meters of riparian areas, public water reserves, and springs.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
RIP-8 Prioritize restoration activities in riparian systems that are functional-at risk or nonfunctional.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
RIP-9 Continue to apply integrated species management to accomplish riparian restoration through biological, chemical, mechanical, and manual methods (e.g., tamarisk control, willow plantings).	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Acquire riparian lands and water resources (from willing sellers) to preserve and maintain riparian habitat and instream flow.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Close riparian areas to wood cutting, except where permitted for traditional cultural practices identified for Native Americans or restoration to benefit riparian values.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Management strategies would be implemented to restore degraded riparian communities, protect natural flow requirements, protect water quality, and manage for year-round flow.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Season-of-Use: Season of use adjustments would be made on a case-by-case basis to achieve PFC.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs Assess watershed function using <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997); USDA Forest Service desired conditions for rangelands; riparian PFC; AIM methodology; and state water quality standards.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs Implement best management practices relative to water quality according to <i>Utah Statewide Nonpoint Source Pollution Management Plan</i> (UDEQ 2013).	See management above.	See management above.	See management above.	See management above.
Per 2020 ROD/MMPs Provide for harvest of forest products when the activity would improve water production and/or does not adversely affect water quality.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs Manage actions on BLM-administered and NFS lands in BENM in accordance with relevant recommendations published in the State of Utah's TMDL reports.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Manage actions in BENM in accordance with relevant recommendations published in the State of Utah's TMDL reports and in collaboration with the BEC.
Per 2020 ROD/MMPs During implementation-level travel planning, avoid locating new hiking and equestrian trails and reduce duplicate trails within 100 meters of water sources or on sensitive soils (including steep slopes) whenever possible and practical to minimize impacts to soil and water resources.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Collaborate with San Juan County, the State of Utah, Tribal governments, and local municipalities on management of municipal watersheds to meet local needs.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Per 1986 Manti-La Sal LRMP Riparian, Floodplain, and Wetlands Management <ul style="list-style-type: none"> • Prior to implementation of project activities, delineate and evaluate riparian areas and/or wetlands that may be impacted (Forest Service Manual 2542). • Give preferential consideration to riparian area-dependent resources in cases of unresolvable resource conflicts (Forest Service Manual 2526). • Floodplains should be identified and, as appropriate, a risk/hazard analysis performed for project sites where long-term occupancy is proposed (Forest Service Manual 2527). • Protect present and necessary future facilities that cannot be located out of the 100-year floodplain by structural mitigation (deflection structures, riprap, etc.) • Implement mitigation measures when present or unavoidable future facilities are located in active floodplains to ensure that public and facility safety requirements, state water quality standards, sediment threshold limits, bank stability criteria, flood hazard 	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>reduction and instream flow standards are met during and immediately after construction.</p> <p>Riparian Area Management Not-Mapped (RPN):</p> <ul style="list-style-type: none"> • Prior to implementation of project activities, delineate and evaluate riparian areas and/or wetlands that may be impacted (Forest Service Manual 2526). <p>Production of Forage (RNG):</p> <ul style="list-style-type: none"> • Where site-specific development adversely affects long-term productivity or management, those authorized to conduct development would be required to replace loss through appropriate mitigations. • Obtain Section 404 permits when needed for proposed activities causing disturbance to floodplains and wetlands. 				
<p>Per 1986 Manti-La Sal LRMP</p> <p>Soil and Water Resource Improvement Maintenance Watershed Protection/Improvement (WPE)</p> <ul style="list-style-type: none"> • Maintain completed watershed improvement projects until project objectives have been obtained. 	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>
<p>Per 1986 Manti-La Sal LRMP</p> <p>Soil and Water Resource Improvements</p> <ul style="list-style-type: none"> • Rehabilitate disturbed areas, where feasible, that are eroding excessively and/or contributing significant sediment to perennial streams. • Priorities would be set by the WINI and evaluation. • Soil losses should be at or below the soil loss tolerance values (T-factors) as defined by the NRCS and/or as modified by the USDA Forest Service. • FSM 2520. • Maintain completed watershed improvement projects until project objectives have been attained. • Identify, prescribe, and implement appropriate action before, during, and after landslide and/or flood events. <p>Riparian Area Management Not-Mapped (RPN)</p> <ul style="list-style-type: none"> • Prevent or remove unacceptable debris accumulations that reduce stream channel stability and capacity. • Avoid channelization of natural streams. Where channelization is necessary for flood control or other purposes, use stream geometry relationships to re-establish meanders, width/depth ratios, etc. consistent with each major stream type. • Treat disturbed sites resulting from resource development or use activities to reduce sediment yields to the natural erosion rates in the shortest possible time. • Stabilize streambanks that are damaged beyond natural recovery in a reasonable period with appropriate methods or procedures. • Minimize significant soil compaction and disturbance in riparian ecosystems. Allow use of heavy construction equipment during periods when the soil is less susceptible to compaction or rutting. • Maintain or enhance the long-term productivity of soils within the riparian ecosystem. <p>Watershed Protection/Improvement (WPE)</p> <ul style="list-style-type: none"> • Rehabilitate excessively eroding sites by applying the appropriate watershed improvement practices. • Base priorities on the WINI and USDA Forest Service evaluation process. 	<p>Agencies would collaborate with the BEC to plan and implement stabilization of perennial streambanks that are damaged beyond natural recovery in a reasonable period with appropriate methods or procedures, where feasible. This includes the following:</p> <ul style="list-style-type: none"> • Rehabilitate disturbed areas, where feasible, that are eroding excessively and/or contributing significant sediment to perennial streams. • Soil losses should be at or below the soil loss tolerance values (T-factors) as defined by the NRCS. • Avoid channelization of natural streams. Where channelization is necessary for flood control or other purposes, use stream geometry relationships to re-establish meanders, width/depth ratios, etc. consistent with each major stream type. 	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B with the following addition:</p> <ul style="list-style-type: none"> • Incorporate Traditional Indigenous Knowledge and practices regarding managing natural streams and stream patterns, including the use of check dams.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Research, Protection, & Interpretation of Lands & Resources (RPI)</p> <ul style="list-style-type: none"> • Manage soil and water resource activities to be compatible with the values of the unit. • Allow instrumentation to measure precipitation and climate variables needed for research study purposes. • Prohibit water developments or watershed protection activities that would detract from the purpose for which the unit was established. <p>Dark Canyon Wilderness Management (DCW)</p> <ul style="list-style-type: none"> • Where it would not impair the wilderness character, restore soil disturbances caused by human use (past mining, trail construction and use, camping, etc.) to soil loss tolerance levels commensurate with the natural ecological processes for treatment area. • Maintain sites in Code-A-Site categories light to moderate. 				
<p>Per 1986 Manti-La Sal LRMP Water Uses Management</p> <p>Secure favorable flows of water to:</p> <ul style="list-style-type: none"> • Ensure that instream flows maintain stable and efficient channels and provide for administrative and protection use. • Provide for fish and wildlife habitats, recreation, and livestock use pursuant to the Multiple Use and Sustained Yield. • Forest Service Handbook 2509.17. <ul style="list-style-type: none"> ○ Obtain through the state, where appropriate, water rights for consumptive uses and instream flows as needed for the purposes of national forest management. ○ Maintain instream flows to protect USDA Forest Service resources and uses. • Forest Service Manual 2541. <ul style="list-style-type: none"> ○ Prohibit new or expansion of existing spring or other water source development and related facilities when <ul style="list-style-type: none"> ▪ loss of water results in unacceptable impacts on riparian, vegetation, fisheries, or other USDA Forest Service resources and uses ▪ development and/or facilities would result in unacceptable erosion, road damage, land instability, or disruption or damage to springs or water sources 	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>Secure favorable flows of water to do the following:</p> <ul style="list-style-type: none"> • Ensure that stream flows maintain stable and efficient channels and provide for administrative and protection use. • Protect BENM objects. • Obtain through the state, where appropriate, water rights for consumptive uses and instream flows. • Maintain instream flows to protect BENM objects. • Prohibit new or expansion of existing spring or other water source development and related facilities when <ul style="list-style-type: none"> ○ It would impact the PFC of riparian, wetlands, and water resources. ○ It would result in unacceptable erosion, road damage, land instability, or other types of disruption or damage. ○ It would not protect BENM objects.
<p>Per 1986 Manti-La Sal LRMP Water Quality Management</p> <ul style="list-style-type: none"> • Improve or maintain water quality. • Meet Utah and Colorado state water quality standards (FSM 2532). • Implement best management practices relative to water quality in all resource activities. • Nonpoint Source Water Quality Management Plan for Utah and Colorado <p>Riparian Area Management Not-Mapped (RPN)</p> <ul style="list-style-type: none"> • Vegetate disturbed soils in sites where adverse impacts would occur according to the following priorities: <ul style="list-style-type: none"> ○ Aquatic ecosystems ○ Riparian ecosystems ○ Riparian areas outside of aquatic and riparian ecosystems 	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).	See Management Actions Common to All Action Alternatives (Section 2.4.6.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> Minimize surface-disturbing activities that alter vegetative cover, result in stream channel instability, loss of channel cross sectional areas, or reduce water quality. 				
Per 1986 Manti-La Sal LRMP Municipal Watershed Management <ul style="list-style-type: none"> Manage municipal watersheds for discretionary uses with mitigation measures to protect the water supply for intended purposes. Allow projects when the proposed mitigation measures provide adequate protection. R-4 Supplement to Forest Service Manual 2543. Prolong stream flow where feasible to increase water yields. 	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 1986 Manti-La Sal LRMP Water Yield Improvement <ul style="list-style-type: none"> Pursue water yield augmentation when and where research has shown that it is economical and environmentally sound. During the interim, water yield increases would be incidental to other management projects. Analyze the manipulation of forest types, when significant projects are proposed by other activities, for water yield benefits and impacts. 	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

2.4.7. Vegetation

2.4.7.1. GOALS AND OBJECTIVES

- In collaboration with the BEC and Tribal Nations, use ESDs/Vegetation Condition Classes (VCC) to identify and manage for desired vegetation community composition and range of conditions for vegetation communities throughout BENM, including what communities are most appropriate for different areas, where traditional harvest can be used as part of the management of the Monument, and where fire can be used to return natural vegetative communities.
- Manage vegetation to support fish and wildlife habitats and healthy watersheds.
- Manage vegetation to support traditional uses, medicinal plants, and other vegetative resources identified by the BEC and Tribal Nations as being culturally important according to Tribal expertise and where consistent with the protection of BENM objects.
- Manage applicable vegetative types for multiple successional stages to provide for a high level of vegetative diversity and productivity.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.7.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Collaborate with the BEC in identifying treatment priorities with the goal of improving vegetation conditions to minimize uncharacteristic fire risk.
- Coordinate with the BEC to incorporate Traditional Indigenous Knowledge in the identification and management of culturally important plants, where appropriate. Culturally important plants would be managed to protect them from potential impacts from uncharacteristic fire, livestock grazing, recreation, and other discretionary actions.
- Coordinate with the BEC to incorporate Traditional Indigenous Knowledge into vegetation management, including culturally appropriate management techniques and seasons.
- Agencies would coordinate with the BEC and Tribal Nations in controlling the spread of invasive and non-native plants. Use a combination of Traditional Indigenous Knowledge, including to the extent practicable, Tribal Nations policy on invasive species, and agency techniques; for example, manage for a dense understory of native species with a reduction in tamarisk and improvement of cottonwood and willow regeneration. Along with other treatment options, agencies would also use whole tree extraction for removal of invasive species in riparian areas where practicable.
- Agencies would collaborate with the BEC to protect and/or enhance culturally important plant communities during fuels reduction activities.
- Agencies would collaborate with the BEC in planning vegetation treatments during the appropriate season and conditions to protect BENM objects.

2.4.7.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-6. Alternatives for Vegetation

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>BLM-Administered Lands – No corresponding management under the No Action Alternative</p> <p>NFS Lands</p> <p>Per 1986 Manti-La Sal LRMP</p> <ul style="list-style-type: none"> Certain vegetative types are to be managed such that varying successional stages would be present to provide for a high level of vegetative diversity and productivity. Aspen is to be managed, with commercial or noncommercial treatments, with the goal of maintaining 13% of the forest in aspen type or increasing the aspen type toward the 19% it represented in 1915. Utilize native plant species from locally adapted seed sources in management activities when and where practical. <p>Desired Future Condition of the Forest</p> <p>Aspen</p> <ul style="list-style-type: none"> The aspen vegetation type would be managed and maintained in a condition of high productivity. Silvicultural practices treating total clones would generally be utilized, resulting in the aspen type appearing as even-aged stands but with stands in all age classes throughout the forest. <p>Engelmann Spruce – Alpine Fir</p> <ul style="list-style-type: none"> Approximately 25% of this type is suitable for intensive management through commercial timber and wood product sales. Harvesting and utilizing shelterwood or modified shelterwood systems would occur where slope stability would not be affected and where the practice would enhance vegetation diversity as well as improve wildlife habitat. The number of fir stands would be diminished as a result of some stands being converted back to aspen. <p>Ponderosa Pine</p> <ul style="list-style-type: none"> Approximately 50% of the type is suitable for intensive management using commercial timber and wood product sales. Silvicultural practices used would emphasize the high productivity of this type while considering range, wildlife, and recreational uses and values. <p>Pinyon-Juniper</p> <ul style="list-style-type: none"> Pinyon-juniper stands (about 10% of the total) on gentle slopes and land with good soils would be treated periodically to maintain early successional stages. This would help provide vegetation, scenic, and habitat as well as forage and improved watershed. Pinyon-juniper stands (about 90% of the forest) on steeper slopes and on lands with poor or rocky soils would be extensively managed and generally not treated except by natural disturbance. <p>Riparian</p> <ul style="list-style-type: none"> Vegetative cover within the riparian component ecosystems would be maintained or diversified and enhanced as necessary to emphasize watershed, wildlife, and fisheries values. The stage of vegetative development may be locally altered to increase riparian and/or aquatic ecosystems. <p>Subalpine Forb Grassland</p> <ul style="list-style-type: none"> The subalpine forb grassland would include a diverse mixture of native and desirable introduced high forage– 	<p>Vegetation management would include all available tools, including mechanical methods, consistent with the protection of BENM objects. Emphasis would be on maintaining functional/structural plant groups and the productivity of native species and providing healthy communities and vegetation cover types for traditional/ceremonial uses, habitat, and habitat connectivity to enhance species resiliency.</p> <p>Use “light-on-the-land” treatment in designated wilderness and wilderness study areas (WSAs).</p> <p>In collaboration with the BEC, the agencies would work to identify stewardship contracts or other partnerships to reduce fuels and provide fuels wood to Tribal Nations.</p>	<p>Same as Alternative B with following additions:</p> <ul style="list-style-type: none"> If treatments are authorized in designated wilderness, USDA Forest Service recommended wilderness, WSAs, and lands managed for wilderness characteristics, use light-on-the-land methods. No chaining would be allowed on BENM. 	<p>Same as Alternative C with the following addition:</p> <ul style="list-style-type: none"> Wherever practicable, use light-on-the-land techniques throughout the entire BENM. 	<p>Vegetation management throughout BENM would emphasize Traditional Indigenous Knowledge and techniques and/or natural processes for vegetation management, including consideration of impacts on wildlife species habitat. Mechanical methods for vegetation management would be used only when necessary to protect BENM objects.</p> <p>Only native, non–genetically modified (GMO) seeds would be used for revegetation/reclamation unless necessary to protect BENM objects.</p> <p>No chaining would be allowed on BENM.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>producing plant species. Management would maintain this complex in a healthy, vigorous condition to preclude invasion by less desirable species.</p> <p>Gambel Oak and Mountain Shrub Types</p> <p>Per 1986 Manti-La Sal LRMP</p> <ul style="list-style-type: none"> Intensive management practices would maintain structural diversity within the woody species in at least 25% of the area cover by the Gambel oak and Mountain shrub types. Vegetative diversity within grass and forb ground cover would also be improved. In some cases, the Gambel oak would be encouraged to successionally develop as an open savannah or in a high seral stage. Use preplanned prescribed fire resulting from planned or unplanned ignitions to accomplish resource management objectives, such as reducing fuel load buildup, range or wildlife habitat improvement, etc. 				
<p>Per 2020 ROD/MMPs</p> <p>Hazardous fuels reduction treatments would be used to restore ecosystems; protect human, natural, and cultural resources; and reduce the threat of wildfire to communities.</p>	<ul style="list-style-type: none"> Same as Alternative E. 	Same as Alternative E.	Same as Alternative E.	<p>Hazardous fuels reduction treatments would be used to restore ecosystems; protect human, natural, and cultural resources; and reduce the threat of wildfire to communities.</p> <p>In addition to protecting human, natural, and cultural resources, fire and fuels treatments used throughout BENM would be implemented with the goal of returning to natural fire return intervals, historic vegetation conditions, and landscape characters, wherever possible, and be consistent with the protection of BENM objects. Prohibit vegetation treatments and nonstructural range improvements with a primary purpose of increasing forage for livestock.</p>
<p>Per 2020 ROD/MMPs</p> <p>Prioritize treatment in high value/high-risk areas (e.g., wildland-urban interface, developed recreation facilities, including campgrounds, Fire Regime Condition Class III areas).</p>	<p>Agencies would collaborate with the BEC to identify areas of high value/high risk and prioritize treatment in those areas. These could include, but are not limited to, areas that provide traditional use plants or animals, areas not meeting the desired VCC, or areas that have significant cultural resources. Traditional Indigenous Knowledge would be incorporated in guiding vegetation management, and emphasis would be on maintaining desirable future conditions of vegetation cover types for traditional/ceremonial uses and in maintaining desired ESDs/VCC.</p>	<p>Agencies would prioritize treatments to reduce fire risk in areas with motorized access, high visitation, and/or developed recreation facilities; in areas without motorized access, high visitation, and/or developed recreation facilities, would prioritize treatments as described in Alternative B.</p>	<p>Vegetation management would be prioritized as described under Alternative B. Throughout BENM, agencies would prioritize the use of treatments using traditional indigenous techniques and/or natural processes for vegetation management. Mechanical treatments would be used only when necessary to protect BENM objects.</p>	<p>Agencies would coordinate with the BEC and Tribal Nations to identify areas of high value/high risk and prioritize treatment in those areas and that consider the importance of seasonality. These could include, but are not limited to, areas that provide traditional use plants or animals, areas not meeting the desired VCC, or areas that have significant cultural resources. Traditional Indigenous Knowledge would be prioritized in guiding vegetation management. Agencies, in collaboration with the BEC, would prioritize the use of treatments using traditional indigenous techniques and/or natural processes for vegetation management. Mechanical treatments other than chaining would be used only when necessary to protect BENM objects.</p>
<p>Per 2020 ROD/MMPs</p> <p>Use native plant species from locally adapted seed sources in management activities when and where practical. Nonnative plant species have the potential to cause systems to move outside of their historic range of variation; therefore, the use of nonnative species should be justified to indicate how their use is important for maintaining or restoring a cover type to functioning conditions.</p>	<p>Agencies would collaborate with the BEC when determining appropriate seed mixes for revegetation efforts. Priority would be on the use of native seeds based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, agencies would collaborate with the BEC to identify desirable nonnative seeds that may be used in limited situations to protect BENM objects.</p>	Same as Alternative B.	<p>Same as Alternative B, with the following exception:</p> <ul style="list-style-type: none"> Agencies would collaborate with the BEC when determining appropriate seed mixes for revegetation efforts. Only the use of native seeds would be allowed. 	<p>Agencies would collaborate with the BEC when determining appropriate seed mixes to provide for the revegetation of native and/or culturally important or traditionally harvested species. Priority would be on the use of native seeds for restoration based on availability, adaptation, and probability of success. Where probability of success or adapted seed availability is low, agencies would collaborate with the BEC to identify nonnative, non-GMO seeds that may be used to protect BENM objects.</p>
<p>Per 2020 ROD/MMPs</p> <p>Cooperating agreements with other federal, state, local, and private organizations would be developed to control invasive nonnative species, control insect pest species, and implement fuels treatments and wildland-urban interface risk assessments and management.</p>	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
<p>Per 2020 ROD/MMPs</p> <p>Pack stock and riding stock users on BLM-administered and NFS lands would be required to use certified weed-seed-free feed.</p>	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>Livestock grazing operations and pack stock and riding stock users on BENM would be required to use certified weed-seed-free feed. Where possible, precautions would be taken to limit weed seed transfer on hooves, boots, boats, wheel axles, and vehicles.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs Restoration and rehabilitation activities would be required to use certified weed-seed-free seed mixes, mulch, fill, etc.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Per 2020 ROD/MMPs The power washing of equipment used for permitted or administrative uses would be required in areas with known weed populations or vectors to known weed populations to help control noxious weeds.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Per 2020 ROD/MMPs The agencies would provide for the management, protection, and access to vegetation types important to Tribal Nations' ceremonial or other traditional uses.	The agencies would provide for the management, protection, and access to vegetation types important to Tribal Nations' ceremonial or other traditional uses to the greatest extent possible consistent with applicable law.	Same as Alternative B.	Same as Alternative B.	The agencies would collaborate with the BEC and Tribal Nations to provide for the monitoring, management, protection, and access to vegetation types important to Indigenous ceremonial or other traditional uses. Agencies would collaborate with the BEC and Tribal Nations on the identification of areas for seasonal restrictions to vegetation management and vegetation gathering as applicable to provide for resource rest or to allow for traditional uses or ceremonies.
Per 2020 ROD/MMPs Maintain or increase existing levels of vegetation treatments. Treatment priorities would be identified to make progress in moving areas in VCC III to VCC II and VCC II to VCC I.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs Areas that meet <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997) or USDA Forest Service desired conditions for rangelands would be open to private seed gathering and plant collection.	Commercial and private seed collection would be allowed through permits. Agencies would collaborate with the BEC on management of seed collection, including collection for traditional, medicinal, and/or ceremonial uses; scientific collection; and the BLM's Seeds of Success management program.	Same as Alternative B.	Same as Alternative B with the following exception: <ul style="list-style-type: none">No commercial seed gathering or plant collection would be allowed. Private seed collection would be allowed through permits.	No commercial seed gathering or plant collection would be allowed. Private seed collection and plant collection would be allowed through permits—for example, through notification of use through a point of contact. Agencies would coordinate with the BEC on management of and cultural appropriateness of seed collection, including collection for traditional, medicinal, and/or ceremonial uses; scientific collection; and the BLM's Seeds of Success management program.
Per 2020 ROD/MMPs The entire BENM or certain localities may be closed to seed gathering as necessary to provide for sustainable annual seed production of native plants. An exception to this would be made to allow for private seed gathering and plant collection for Tribal Nations' traditional, medicinal, and ceremonial purposes.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	The agencies would collaborate with the BEC to identify areas in BENM that would be closed to seed gathering as necessary to provide for sustainable annual seed production of native plants. An exception to this would be made where such closures constitute a substantial burden on religious practices, including seed gathering and plant collection for Tribal Nations' traditional, medicinal, and ceremonial purposes.
Per 2008 Monticello RMP Invasive and non-native weed species (as identified in Table 3.59 of the PRMP, <i>Invasive and Noxious Weeds of San Juan County</i> [BLM 2008b]) would be controlled, and the infestation and spread of new invasive species prevented through cooperative agreements and implementation of the principles in BLM weed management policies and action plans.	See Management Common to All Action Alternatives (Section 2.4.7).	See Management Common to All Action Alternatives (Section 2.4.7).	See Management Common to All Action Alternatives (Section 2.4.7).	See Management Actions Common to All Action Alternatives (Section 2.4.7).
Per 2008 Monticello RMP Prevention measures (SOPs and mitigation measures) from the 2007 <i>ROD Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States PEIS</i> (BLM 2007a) and associated document] are incorporated. Those best management practices are located in Appendix B and mitigation measures are in Table 2 of that ROD.	Agencies would implement applicable vegetation management and associated best management practices as directed by current agency-approved vegetation management plans, as amended.	Same as Alternative B.	Same as Alternative B.	Agencies would collaborate with the BEC on herbicide use or other control methods (i.e., introduced species) as part of vegetation management projects.
Per 2008 Monticello RMP The following sagebrush communities are prioritized for treatment: Harts Draw, Beef Basin, and Shay Mesa.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2008 Monticello RMP Treat greasewood in Comb Wash, Butler Wash, Indian Creek, and South and North Cottonwood Washes, to improve ground cover, biodiversity, and water quality.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Maintain existing land treatments, to meet RMP objectives and <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997). Any new land treatments developed in addition to those listed would also be maintained as necessary to meet RMP objectives and <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> .	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	In collaboration with the BEC, maintain existing vegetation treatments and design new vegetation treatments to protect BENM objects.
Per 2020 ROD/MMPs Fuels work would be allowed in the Dark Canyon Wilderness only if it were determined that it would maintain or enhance wilderness characteristics.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Fuels and vegetation management in designated wilderness, WSAs, USDA Forest Service recommended wilderness, and lands managed for wilderness characteristics would only be allowed if they were determined to be consistent with the protection of Monument objects and maintain or enhance long-term wilderness character or characteristics, as applicable.
No similar management.	No similar management.	No similar management.	No similar management.	The agencies and the BEC would work together to identify the importance of seasonality for vegetation management and treatments, harvest, and protection.
No similar management.	No similar management.	No similar management.	No similar management.	Agencies would collaborate with the BEC and Tribal Nations to co-identify measures to implement during drought. These could include, but are not limited to the following: <ul style="list-style-type: none"> • Limitations on seed collection • Additional requirements for restoration and/or erosion control • Changes in vegetation management • Limitations on discretionary activities

2.4.8. Forestry and Woodlands

2.4.8.1. GOALS AND OBJECTIVES

- Agencies would collaborate with the BEC and consult with Tribal Nations to incorporate Traditional Indigenous Knowledge to maintain and/or promote continued health, diversity, and resiliency of forest structural stages, including old growth.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.8.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would collaborate with BEC and Tribal Nations to incorporate Traditional Indigenous Knowledge to establish and implement forest health and forest management standards and guidelines to assess conditions and guide management decisions for wood products.
- When initiating vegetative management treatments in forested cover types, provide for a full range of seral stages by forested cover type that achieves a mosaic of habitat conditions and diversity. Each seral stage should contain a strong representation of early seral tree species.
- Aspen is to be managed with noncommercial treatments with the goal of maintaining or increasing the aspen forest type.
- Agencies, in collaboration with the BEC, would identify stands with old-growth characteristics and management practices to achieve old-growth management direction where applicable. Agencies, in collaboration with the BEC, would prepare an inventory and plan for managing stands with old-growth characteristics.
- Agencies, in collaboration with the BEC, would follow forest health and forest management standards and guidelines to assess conditions and guide management decisions for wood products and to preserve the benefits of carbon sequestration and air quality from healthy forests. Traditional Indigenous Knowledge would be applied, as applicable.

- Where possible, agencies would prioritize making fuelwood and forestry products resulting from fuels and vegetation projects readily available to Indigenous people and other members of the public. All wood product harvest would require an appropriate authorization. Agencies would coordinate with the BEC, Tribal Nations, local governments, and other organizations to support the collection, storage, and transportation of fuelwood products to communities.
- All lands in BENM would be designated as lands not suited for timber production (i.e., growing, harvesting, and regenerating crops of trees for commercial use); however, timber management would be used as appropriate to provide for the protection of BENM objects.
- Authorizations for private use of wood products would continue to be issued to the public, consistent with the availability of wood products and the protection of other resource values. Agencies would coordinate with the BEC and Tribal Nations to identify appropriate areas for wood product harvest and to provide fuelwood for members of the Tribal Nations. This coordination would also, if appropriate, include identifying areas for seasonal or multiyear closures to allow regeneration of woodlands or to provide for traditional or ceremonial uses as appropriate.

2.4.8.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-7. Alternatives for Forestry and Woodlands

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
See Appendix A, Figure 2-1, Areas open and closed to wood product harvest under Alternative A. Per 2020 ROD/MMPs Cottonwood and willow harvest would be allowed for Tribal Nations' ceremonial uses only by permit. Restrictions on this permitted harvest would be implemented as necessary to achieve or maintain PFC and to maintain or improve T&E species or special status species, wildlife, and aquatic habitat.	Management not carried forward. See Section 2.4.6, Water Resources.	Management not carried forward. See Section 2.4.6, Water Resources.	Management not carried forward. See Section 2.4.6, Water Resources.	Management not carried forward. See Section 2.4.6, Water Resources.
Per 2020 ROD/MMPs On BLM-administered lands, allow wood product harvest in areas where the BLM has approved fuels treatment or habitat treatment projects (unless otherwise prohibited).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).
Per 2020 ROD/MMPs Permits for private use of wood products would continue to be issued to the public, consistent with the availability of wood products and the protection of other resource values.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs NFS lands would be designated as unsuitable for timber production and would be withdrawn from that use to allow those lands to meet other resource purposes, including proper care and management of BENM objects. This would not preclude pre-commercial and commercial harvest to meet other resource objectives.	Agencies would collaborate with the BEC and Tribal Nations when identifying criteria and/or areas for commercial timber harvest to meet resource objectives and protect BENM objects. This would include identifying opportunities to use forestry/wood product harvest to improve or restore healthy forest conditions and/or to provide economic benefits to local communities when consistent with protecting BENM objects.	Same as Alternative B.	Same as Alternative B.	Agencies would collaborate with the BEC to identify criteria and/or areas for commercial timber harvest if activities protect BENM objects. This would include identifying opportunities to use forestry/wood product harvest to improve or restore healthy forest conditions. Emphasis would be placed on not providing for commercial timber harvest on BENM unless deemed necessary to protect BENM objects, and in collaboration with the BEC and Tribal Nations.
Per 2020 ROD/MMPs Within designated woodland harvest areas, private use woodland harvest on BLM-administered and NFS lands would be allowed in areas with pinyon pine and juniper encroachment where site-specific analysis indicates that harvest would be useful for restoration of the diversified vegetative community.	Encourage private use wood product harvest in areas with pinyon pine and juniper encroachment where site-specific analysis indicates that harvest would be useful for restoration of the diversified vegetative community.	Same as Alternative B.	Same as Alternative B.	Private use wood product harvest would be allowed through an authorization system within designated harvest areas. In collaboration with the BEC, designated harvest areas would be designated with emphasis on areas with pinyon pine and juniper encroachment and where site-specific analysis indicates that harvest would be useful 1) for restoration of the diversified vegetative community; 2) for protection of the sagebrush ecosystem; and 3) where effects to co-occurring species can be minimized, cultural resources can be avoided in the harvest, and the removal of pinyon pine and juniper is deemed necessary.
Per 2020 ROD/MMPs Provide for woodland harvest to support fuels treatment projects, as needed.	Same as Alternative A (see Section 2.4.17, Fire Management).	Same as Alternative A (see Section 2.4.17, Fire Management).	Same as Alternative A (see Section 2.4.17, Fire Management).	Provide for wood product harvest to support fuels treatment projects, as needed, and in collaboration with the BEC.
Per 2020 ROD/MMPs Zones in BENM considered for private use of woodland products (Map B-9 and Map B-18 in Appendix B of the 2020 ROD/MMPs): Harts Draw and Salt Creek Mesa; South	With the exception of all wilderness, wilderness study areas (WSAs), Research Natural Areas, and the Canyon Rims Special Recreation Management Area (SRMA), the entire BENM would be available for private wood product use,	Same as Alternative B.	Same as Alternative B.	Agencies would collaborate with the BEC and Tribal Nations to identify specific areas within BENM that would be open or closed to wood product harvest permanently or on a seasonal or multiyear basis to allow for resource rest.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Cottonwood, North Comb Ridge, Cedar Mesa, and White Canyon.	unless otherwise specified in this alternative. Agencies would collaborate with the BEC and Tribal Nations when identifying specific areas within BENM that would be open or closed on a seasonal or multiyear basis to allow for resource rest. Limited on-site collection of dead wood for campfires would be allowed in wilderness, WSAs, and IRAs unless otherwise specified in this alternative. Acreage open to wood product harvest: 930,910 Acreage closed to wood product harvest: 433,148 See Appendix A, Figure 2-2, Areas open and closed to wood product harvest under Alternatives B–D			Limited on-site collection of dead wood for campfires would be allowed in WSAs, IRAs, and wilderness areas, unless otherwise specified in this alternative.
Per 2020 ROD/MMPs Exclude all WSAs and IRAs from woodland product use except for limited on-site collection of dead wood for campfires.	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).
Per 2020 ROD/MMPs Exclude woodland product harvest from all developed recreation sites, livestock/wildlife exclosures, cultural sites, and the Indian Creek SRMA, including on-site collection of dead wood for campfires.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Exclude wood product harvest from all developed recreation sites, livestock/wildlife exclosures, and cultural sites.
Per 2020 ROD/MMPs Exclude floodplains and riparian and aquatic areas from woodland product use except for Tribal Nations' ceremonial purposes as determined on a site-specific basis.	Exclude floodplain, riparian, and aquatic areas from wood product use except for Tribal Nations' traditional and/or ceremonial uses. Agencies would collaborate with the BEC and Tribal Nations on identification of those uses.	Same as Alternative B.	Same as Alternative B.	Exclude floodplains, riparian and aquatic areas, and springs from wood product use except where inconsistent with the Religious Freedom Restoration Act and other applicable laws. Private collection of wood products would not be prohibited where such prohibition constitutes a substantial burden on religious practices. Agencies would collaborate with the BEC and culturally affiliated Tribal Nations on identification of those uses.
Per 2020 ROD/MMPs Existing limitations on off-road travel for wood gathering could be modified as necessary to maintain long-term sustainability or facilitate wood gathering where resource impacts are not a concern.	Cross-country OHV travel for wood gathering would not be allowed on BENM. On NFS lands only: at the discretion of the Responsible Official, off-road travel would be allowed up to 150 feet off the road with an authorization.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Per 2020 ROD/MMPs Prior to authorizing private woodland product harvest, the agencies would ensure that the activity is consistent with the proper care and management of BENM objects.	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).
Per 2020 ROD/MMPs If monitoring of vegetation cover and soil erosion indicates that woodland harvest is having potentially irretrievable or irreversible impacts on natural or cultural resources or is conflicting with BENM objects, the Authorized Officer (BLM)/Responsible Official (USDA Forest Service) would alter the designated harvest area or harvest season as necessary to allow for resource reclamation and/or to protect that resource or resource use.	Where monitoring of vegetation cover and soil erosion indicates that wood product harvest is having impacts on natural or cultural resources or is conflicting with protecting BENM objects, the agencies would collaborate with the BEC when altering the designated harvest area or harvest season as necessary to protect the resource and provide rest.	Same as Alternative B.	Same as Alternative B.	Where monitoring of vegetation cover and soil erosion indicates that wood product harvest is having adverse impacts on natural or cultural resources or is conflicting with BENM objects, the agencies would collaborate with the BEC to alter the designated harvest area or harvest season as necessary to allow for resource rest or reclamation and/or to protect that resource or resource use. Consistent monitoring for soil erosion and vegetation cover would be needed to establish baselines in the designated harvest areas.
Per 2020 ROD/MMPs On BLM-administered lands, the Authorized Officer (BLM) would limit OHV access for wood gathering to designated routes or may grant OHV travel off designated routes if consistent with the objects of BENM. This determination would be made based on monitoring of existing vegetation cover and soils erosion at the site-specific project level.	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.8.2).
NFS Lands Per 1986 Manti-La Sal LRMP Timber Resource Management • Manage timberlands suitable for commercial harvest for timber or wood fiber productions.	NFS lands The USDA Forest Service would collaborate with the BEC when selecting and applying all silvicultural treatments (including even-aged harvest and clearcutting, not exceeding 40 acres). These would be evaluated on a case-by-case basis by the agency forester/silviculturist in coordination with the	NFS lands Same as Alternative B.	NFS lands Same as Alternative B with the following exception: • Agencies would limit the maximum size opening created by silvicultural treatment in ponderosa pine and mixed-conifer forest to 2 acres.	The USDA Forest Service would collaborate with the BEC in the selection and application of all silvicultural treatments. These would be evaluated on a case-by-case basis by the agency forester/silviculturist and in collaboration with BEC Tribal Forestry or Knowledge Holder representation to ensure prescribed activities incorporate Traditional Indigenous

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> • Provide for timber stand improvement, reforestation in sale area improvement plans, and wildlife habitat improvement following seasonal restrictions in active northern goshawk nesting areas. • Manage timberlands not suitable for commercial harvest to maintain forest cover species, but emphasis should be on production of other forest resources and uses. • Use clearcuts as appropriate on any forest cover type with potential for impact or impacted by insects or disease. • Assure that even-aged conifer stands scheduled to be harvested during the planning period would generally have reached the culmination of mean annual increment of growth. <p>Production of Forage (RNG)</p> <ul style="list-style-type: none"> • 01 Maintain and manage non-commercial forested inclusions to provide a high level of forage production, wildlife habitat, and diversity. • 02 Use mechanical, chemical, or prescribed fire to alter timber stands and increase herbaceous yield or cover in areas where harvest methods are impractical or demand does not exist. • 03 Manage aspen stands or mixed fir habitat types at the appropriate ecological stage that provides high herbaceous yield and cover. <p>Silvicultural Examination and Prescription</p> <ul style="list-style-type: none"> • 01 Combine appropriate management activities for the timber type to provide the acceptable range of management intensity for timber production. • 02 Planned vegetative management treatments in the mature and/or old structural groups in a landscape that is at or below the desired percentage of land area in mature and old structural stages (40% conifer, 30% aspen) should be designed to maintain or enhance the characteristics of these structural stages. • G. Limit the maximum size opening created by timber sales to 40 acres unless 1) approved by the regional forester after a 60-day public review period, or 2) salvaging openings created by natural events such as fire, insect or disease attack, and windthrow. • Maximum created opening size in northern goshawk habitat should not exceed 2 acres in ponderosa pine and 1 acre in spruce/fir. • 03 Manage timber product removal and utilization to meet forest discretionary use requirements. • C. Logging or wood product removal requirements to assure controlling soil erosion within acceptable levels: <ul style="list-style-type: none"> ○ On slopes less than 20 percent allow conventional logging systems and equipment where soil surveys or soil data are unavailable. ○ On slopes less than 40 percent allow conventional logging systems and equipment where soil surveys or soil data are available to design erosion mitigation needs. ○ Utilize high floatation equipment on slopes up to 60 percent or cable or aerial systems on any slope. 	<p>BEC to ensure implementation incorporates Traditional Indigenous Knowledge and is consistent with the protection of BENM objects. All treatment units and project design features would be reviewed with the BEC prior to implementation.</p> <p>Within 5 years of plan approval, identify and map forest stands with old-growth forest characteristics or those developing old growth characteristics.</p> <p>Promote continued and accelerated development of late-successional and old-growth habitat by treating early to mid-seral stage forest stands that have the potential to become late-successional and old-growth habitat.</p> <p>If SMUs indicate treatment areas are within sensitive soils, consider restricting logging or wood product removal requirements to assure controlling soil erosion is within acceptable levels. Acceptable logging systems and methods would be evaluated on a site-by-site basis with the agency hydrologist and silviculturist, in collaboration with the BEC.</p> <p>Clearcutting on NFS lands would be prohibited as silvicultural practice, except where used to regenerate aspen.</p> <p>Agencies would design and implement forest management activities to blend with the natural landscape.</p> <p>Agencies would allow conventional logging equipment only on slopes less than 30% to avoid detrimental soil impacts.</p> <p>Salvage or sanitation of dead and/or dying trees would be done only when the salvage would move the stand toward a more ecologically resilient condition and to protect BENM objects.</p>			<p>Knowledge and are consistent with desired cultural landscape value(s) for a given area.</p> <p>Within 5 years of plan approval, identify and map forest stands with old-growth forest characteristics or those developing old-growth characteristics.</p> <p>Promote continued and accelerated development of late-successional and old-growth habitat by treating early to mid-seral stage forest stands that have the potential to become late-successional and old-growth habitat.</p> <p>If SMUs indicate treatment areas contain sensitive soils, consider restricting logging or wood product removal requirements to assure controlling soil erosion is within acceptable levels. Acceptable logging systems and methods would be evaluated on a site-by-site basis with the agency hydrologist and silviculturist, and in collaboration with the BEC.</p> <p>Clearcutting for timber harvest on the Monument would be prohibited. Forestry management activities would be designed to blend with the natural landscape.</p> <p>Agencies would collaborate with the BEC on additional standards of maximum size openings for silvicultural treatments, as consistent with federal regulations</p> <p>Agencies would collaborate with the BEC on additional standards of maximum size openings for silvicultural treatments, as consistent with federal regulations.</p> <p>Agencies would allow conventional logging equipment only on slopes less than 30 percent to avoid detrimental soil impacts.</p> <p>Projects involving salvage of dead and/or dying trees would be evaluated in collaboration with the BEC and only when the salvage would move the stand toward a more ecologically resilient condition to protect BENM objects.</p>
<p>Per 2020 ROD/MMPs</p> <p>Planned vegetative management treatments (excluding unplanned and unwanted wildland fire) in the mature and/or old structural groups in a landscape that is at or below the desired percentage of land area in mature and old structural stages (40% conifer and 30% aspen) should be designed to</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
maintain or enhance the characteristics of these structural stages.				
<p>Per 2020 ROD/MMPs</p> <p>Vegetative treatments should be designed to maintain or promote a vegetative structural stage 4, 5, and/or 6 group. The percentage of the group acreage covered by clumps of trees with interlocking crowns should typically range from 40% to 70% in post-fledgling and foraging areas and from 50% to 70% in nesting areas. To manage outside this range, it should either be shown that the range is not within PFC for the site or the biological evaluation process determines that managing outside the range would be consistent with the landscape needs of the goshawk and its prey. Use the best information available and deemed most reliable to make determinations. Groups are made up of multiple clumps of trees. Groups should be of a size and distribution in a landscape that is consistent with disturbance patterns defined in regional or local PFC assessments. Clumps typically have between two and nine trees in the vegetative structural stage 4, 5, or 6 size class with interlocking crowns.</p> <p>Per 1986 Manti-La Sal LRMP</p> <p>Reforestation</p> <ul style="list-style-type: none"> • 01 Establish a satisfactory stand on cutover areas (as specified in minimum stocking standards), emphasizing natural regeneration within 5 years after final harvest. • 03 When supplemental planting, use trees of the best genetic quality available that are adapted to the planting site (Forest Service Manual 2475). <p>Timber Stand Improvement</p> <ul style="list-style-type: none"> • 01 Utilize Christmas tree or other product sales and thinning for stocking control where the opportunity exists. • 01 Manage tree stands using commercial or noncommercial methods to maintain or enhance recreation values, visual quality, visitor safety or to control insects and disease. <p>Semi-primitive Recreation Use (SPR)</p> <ul style="list-style-type: none"> • 01 Manage forest cover types to perpetuate tree cover and provide healthy stands, high water quality, and wildlife and fish habitats. 	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A, except the standards would be chosen in collaboration with the BEC.
<p>NFS Lands</p> <p>Per 1986 Manti-La Sal LRMP</p> <p>When initiating vegetative management treatments in forested cover types, leave a minimum of 200 snags/100 acres in the ponderosa pine and aspen cover types and 300 snags/100 acres in the mixed-conifer cover type. The minimum preferred size of snags is 18 inches DBH and 30 feet tall. If the minimum number of snags is unavailable, green trees should be substituted. If the minimum size is unavailable, use the largest trees available on-site. The number of snags should be present at the stand level on average and, where they are available, distributed over each treated 100 acres.</p>	<p>NFS lands</p> <p>Same as Alternative A.</p>	<p>NFS lands</p> <p>Same as Alternative A.</p>	<p>NFS lands</p> <p>Same as Alternative A.</p>	<p>When initiating vegetative management treatments in forested cover types, minimum snag numbers and size standards would be determined by the agencies and in collaboration with the BEC, with consideration for the cultural and ecological importance of snags.</p>
<p>NFS Lands</p> <p>Per 1986 Manti-La Sal LRMP</p> <p>When initiating vegetative management treatments, prescriptions should be designed to retain a minimum of 30 down logs (12-inch mid-point diameter and 8 feet long) and 50 tons of coarse woody debris/10 acres in the ponderosa pine cover type, 50 down logs and 100 tons of coarse woody debris/10 acres in mixed-conifer cover type, and 50 down</p>	<p>NFS lands</p> <p>Same as Alternative A.</p>	<p>NFS lands</p> <p>Same as Alternative A.</p>	<p>NFS lands</p> <p>Same as Alternative A.</p>	<p>When initiating vegetative management treatments, minimum down log numbers and size standards would be determined by the agencies and the BEC.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
logs and 30 tons of coarse woody debris/10 acres in the aspen cover type.				
NFS Lands Per 1986 Manti-La Sal LRMP Insect and Disease Management or Suppression <ul style="list-style-type: none"> Prevent or suppress epidemic insect and disease populations that threaten forest and/or range land with an integrated pest management (IPM) approach consistent with resource management objectives. 	NFS lands Same as Alternative A.	NFS lands Same as Alternative A.	NFS lands Same as Alternative A.	Prevent or suppress epidemic insect and disease populations that threaten forest and/or range land with an IPM approach, developed in collaboration with the BEC and consistent with resource management objectives and protection of BENM objects.
NFS Lands Per 1986 Manti-La Sal LRMP Forest and Range Research <ul style="list-style-type: none"> Cooperate with the Intermountain Forest and Range Experiment Station to accomplish research. Protect surface resource conditions to prevent alteration of research projects. 	NFS lands Same as Alternative E.	NFS lands Same as Alternative E.	NFS lands Same as Alternative E.	NFS lands Agencies would collaborate with the BEC, Tribal Nations, the Intermountain Region, and the Rocky Mountain Research Station to plan and execute research where consistent with protecting BENM objects. This includes protecting surface resource conditions to prevent alteration of research projects. Research, monitoring, and management would integrate with regional and global studies to include the regional health of populations and account for potential impacts of climate change range shifts.
No similar management.	No similar management.	No similar management.	No similar management.	Coordinate with the BEC and Tribal Nations to identify, where appropriate, traditionally harvested trees and their uses, monitor populations and locations of these species, and impacts to vegetation and wildlife species.

2.4.9. Lands with Wilderness Characteristics (applies to BLM-administered lands only)

2.4.9.1. GOALS AND OBJECTIVES

- Protect wilderness characteristics (appearance of naturalness and outstanding opportunities for primitive and unconfined recreation or solitude) of non-wilderness study area (WSA) LWC as appropriate, considering manageability and the context of competing resource demands.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.9.2. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-8. Alternatives for Lands with Wilderness Characteristics

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2008 Monticello RMP</p> <p>Manage 48,954 acres of non-WSA LWC for their wilderness characteristics (Appendix A, Figure 2-3, Alternative A, LWC) in four individual areas: Dark Canyon (11,595 acres), Mancos Mesa (5,030 acres), Nokai Dome East (18,629 acres), and Grand Gulch (13,700 acres). The following management would apply:</p> <ul style="list-style-type: none"> • OHV travel limited to designated roads and trails. There are no routes designated within the acres protected for their wilderness characteristics. • ROW avoidance areas • Unavailable for private and commercial woodland harvest except for on-site collection of dead wood for campfires • Available for range, watershed, or habitat improvements and vegetation treatments if beneficial or non-impairing to wilderness characteristics and would meet VRM Class II objectives • VRM Class II for surface-disturbing activities • All existing improvements could be maintained at their current level • Fire suppression would be through light-on-the-land techniques 	<p>Manage 97,403 acres of non-WSA LWC to conserve their wilderness characteristics while allowing for compatible uses. Management would include the following (Appendix A, Figure 2-4, Alternatives B and C, LWC):</p> <ul style="list-style-type: none"> • OHV limited • VRM Class II • ROW avoidance areas • Available for authorized private wood product harvest if beneficial or non-impairing to wilderness characteristics and if it would meet VRM Class II objectives • Available for vegetation, range, watershed, or habitat improvements if beneficial or non-impairing to wilderness characteristics, and if it would meet VRM Class II objectives • All existing facilities could be maintained at their current level but may be removed at the agencies' discretion. • Fire suppression would be through light-on-the-land or Minimum Impact Suppression Tactics. 	<p>Same as Alternative B with the following exceptions (Appendix A, Figure 2-4, Alternatives B and C, LWC):</p> <ul style="list-style-type: none"> • VRM Class I • ROW exclusion area • OHV closed 	<p>All lands in BENM that have been inventoried as having wilderness characteristics (approximately 419,128 acres) would be managed to conserve their wilderness characteristics while allowing for compatible uses (Appendix A, Figure 2-5, Alternatives D and E, LWC).</p> <p>Same management prescriptions as Alternative C.</p>	<p>All lands in BENM that have been inventoried as having wilderness characteristics (approximately 419,128 acres) would be managed to conserve their wilderness characteristics while allowing for compatible uses (Appendix A, Figure 2-5, Alternatives D and E, LWC). Additional standards for wilderness characteristics and lands that meet these characteristics would be developed in collaboration with the BEC to ensure that standards are guided by Traditional Ecological Knowledge and Tribal expertise. Management would include the following:</p> <ul style="list-style-type: none"> • OHV limited • Limitations on management actions and recreation use would be designed with consideration of seasonality in collaboration with the BEC. • VRM Class I • ROW exclusion areas • Available for authorized private wood product harvest if beneficial or non-impairing to wilderness characteristics and if it would meet VRM Class I objectives. • Available for vegetation, watershed, soil, or habitat improvements if beneficial or non-impairing to wilderness characteristics, and if it would meet VRM Class I objectives • All existing facilities could be maintained at their current level but may be removed at the discretion of the agencies and in collaboration with the BEC. • Fire suppression would be through light-on-the-land tactics or Minimum Impact Suppression Tactics.

2.4.10. Special Designations

2.4.10.1. GOALS AND OBJECTIVES

- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.
- Areas of Critical Environmental Concern (ACECs)
 - In collaboration with the BEC, manage areas as ACECs where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; other natural systems or processes; or to protect life and safety from natural hazards.
- TCPs
 - In collaboration with the BEC, designate and manage TCPs to protect tangible and intangible cultural resources, practices, and access for culturally affiliated Tribal Nations.
- Wild and scenic rivers (WSRs)
 - To the extent of the BLM's authority (limited to BLM-administered lands within the river corridor), maintain and enhance the free-flowing character and water quality, preserve and enhance the outstandingly remarkable values (ORVs), and allow no activities within the river corridor that would be inconsistent with identified river values or impact or alter the tentative classification of those river segments determined suitable for congressional designation into the National Wild and Scenic River (NWSR) System until Congress acts on the designation.
 - Protect the free-flowing nature and water quality of the river/segment, the tentative classification level, and prevent impairment of the ORVs within 0.25 mile from the high water mark on each side of the river not to exceed 320 acres per mile. On the San Juan River the area would be 0.25 mile from the high water mark on the north side not to exceed 160 acres per mile. On the San Juan River, the BLM has jurisdiction on the lands north of the river, and the Navajo Nation has jurisdiction on the south side of the river. The BLM would coordinate with the Navajo Nation in developing consistent management of the river.
 - WSRs determined as eligible or suitable for designation under the Wild and Scenic Rivers Act would continue to be managed in accordance with BLM Manual 6400.
- WSAs
 - Manage FLPMA Section 603 WSAs in a manner that does not impair their suitability for congressional designation into the National Wilderness Preservation System.

- WSAs would continue to be managed per BLM Manual 6330, including management as VRM Class I and closed to OHV use.
- Designated Wilderness
 - Preserve and enhance the wilderness character of Congressionally designated wilderness in accordance with the Wilderness Act.

2.4.10.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would collaborate with the BEC on management of wilderness areas consistent with federal law.
- Dark Canyon Wilderness
 - Description and Values – Within BENM, the USDA Forest Service currently manages the approximately 47,000-acre Dark Canyon Wilderness that was designated in 1984. Management activities, other than the special provisions in the Wilderness Act, are limited to those deemed necessary to maintaining or enhancing the wilderness character of the area. The area contributes significantly to ecosystem and species diversity and sustainability, serves as habitat for fauna and flora, offers wildlife corridors, provides a reference area, and provides outstanding opportunities for primitive recreation and solitude. Fire management is used to allow a more natural role in maintaining the ecosystem. The abundant heritage resources are important to the unique character of the wilderness but are not generally interpreted on-site unless necessary for resource protection. Specific management actions for Dark Canyon Wilderness can be found in the 1986 Manti-La Sal LRMP.
- USDA Forest Service Recommended Wilderness and Wilderness Evaluation
 - A wilderness evaluation to determine whether or not LWC managed by the USDA Forest Service would be recommended for wilderness designation would not occur as part of the RMP/EIS, but would occur under the USDA Forest Service planning process. Currently there are no recommended wilderness areas on NFS lands within BENM.
- USDA Forest Service IRAs
 - All IRAs that are partially or entirely within BENM would be managed to be consistent with the 2001 Roadless Rule (36 CFR 294).
- Cliff Dwellers Pasture Research Natural Area (RNA) (USDA Forest Service)
 - Specific management actions for the RNA can be found in the 1986 Manti-La Sal LRMP.
 - Collaborate with the BEC regarding management of the Cliff Dwellers Pasture RNA.

2.4.10.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-9. Alternatives for Special Designations

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs San Juan River ACEC (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern)</p> <ul style="list-style-type: none"> ● Vehicle access, including OHVs/mechanized, limited to designated routes. ● Unavailable for private and/or commercial use of woodland products except for limited on-site collection of dead wood for campfires; woodland use within the floodplain would be limited to collection of driftwood for campfires. ● Available for livestock use October 1–May 31. Grazing must incorporate rest-rotation and/or deferred management systems. Riparian areas must meet or exceed PFC to the extent affected by grazing. ● Available for watershed, range, and wildlife habitat improvements and vegetation treatments. ● Managed to limit recreation use if wildlife values are being adversely impacted. ● Camping closed in areas as necessary to protect cultural, wildlife, and natural processes. ● Designated access trails to cultural sites as necessary to protect cultural resources. ● No camping in cultural sites. ● Ropes and other climbing aids not allowed for access to sites, cultural sites, and nesting raptors. 	<p>The San Juan River ACEC would not be carried forward. This area would be managed under the San Juan River Special Recreation Management Area (SRMA).</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>The San Juan River (5,174 acres [1,555 within Planning Area]) is designated as an ACEC. The ACEC would be managed with the following prescriptions: San Juan River ACEC (Appendix A, Figure 2-6, Alternative A, special designations) Vehicle access, including OHVs/mechanized, limited to designated routes. Unavailable for private and/or commercial use of wood products except for limited on-site collection of dead wood for campfires; woodland use within the floodplain would be limited to collection of driftwood for campfires. Available for livestock use October 1–May 31. Grazing must incorporate rest-rotation and/or deferred management systems. Riparian areas must meet or exceed PFC to the extent affected by grazing. Available for watershed, range, wildlife habitat improvements, and vegetation treatments. Managed to limit recreation use if wildlife values are being adversely impacted. Camping closed in areas as necessary to protect cultural, wildlife, and natural processes. Designated access trails to cultural sites as necessary to protect cultural resources. No camping in cultural sites. Ropes and other climbing aids not allowed for access to structures, cultural sites, and nesting raptors.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>All areas intersected by the San Juan Hill Recreation Management Zone (RMZ) are ROW avoidance areas.</p> <p>Recreation management prescriptions identified for the San Juan Hill RMZ would also be followed and are consistent with the management in Section 2.4.20, Recreation and Visitor Services</p> <p>Per 2008 Monticello RMP</p> <p>San Juan River ACEC – Relevant and Important Values: Scenic, Cultural, Fish and Wildlife, Natural Systems and Processes, and Geological Features</p> <p>The San Juan River (5,174 acres [1,555 within Planning Area]) (Appendix A, Figure 2-6, Alternative A, Area of Critical Environmental Concern) is designated as an ACEC. The acreage has been reduced to exclude the San Juan River Segment 5 area, which was determined suitable for inclusion into the NWSR System (see the Wild and Scenic River section of the 2008 Monticello RMP for management prescriptions.) The ACEC would be managed with the following prescriptions:</p> <ul style="list-style-type: none"> • Vehicle access, including OHVs/mechanized, limited to designated routes. • Unavailable for private and/or commercial use of woodland products except for limited on- site collection of dead wood for campfires; woodland use within the floodplain would be limited to collection of driftwood for campfires. • Available for livestock use October 1–May 31. Grazing must incorporate rest-rotation and/or deferred management systems. Riparian areas must meet or exceed PFC to the extent affected by grazing. • Available for watershed, range, and wildlife habitat improvements and vegetation treatments. <p>West Montezuma Creek to private land managed as VRM Class II.</p> <p>West of accreted land at the Town of Bluff to RM 9 managed as VRM Class III.</p> <p>Managed to limit recreation use if wildlife values are being adversely impacted.</p> <p>Camping closed in areas as necessary to protect cultural, wildlife, and natural processes.</p> <p>Designated access trails to cultural sites as necessary to protect cultural resources.</p> <p>No camping in cultural sites.</p> <p>Ropes and other climbing aids not allowed for access to sites, cultural sites, and nesting raptors.</p> <p>All areas intersected by the San Juan River SRMA are ROW avoidance areas.</p> <p>Recreation management prescriptions identified under the San Juan River SRMA in Section 2.4.20, Recreation, would also be followed and is consistent with the management outlined above.</p> <p>ACEC-54</p> <p>A cultural resources management plan (CRMP) would be written for the San Juan River.</p>				<p>San Juan River ACEC – Relevant and Important Values: Scenic, Cultural, Fish and Wildlife, Natural Systems and Processes, and Geological Features</p> <p>Vehicle access, including OHVs/mechanized, limited to designated routes.</p> <p>Unavailable for private and/or commercial use of wood products except for limited on- site collection of dead wood for campfires; woodland use within the floodplain would be limited to collection of driftwood for campfires.</p> <p>Available for livestock use October 1–May 31. Grazing must incorporate rest-rotation and/or deferred management systems. Riparian areas must meet or exceed PFC to the extent affected by grazing.</p> <p>Available for watershed, range, wildlife habitat improvements and vegetation treatments.</p> <p>Upstream of Bluff managed as VRM Class I.</p> <p>Area formerly managed as San Juan Hill RMZ managed as VRM Class I.</p> <p>Managed as a ROW exclusion area.</p> <p>Managed to limit recreation use if wildlife values are being adversely impacted.</p> <p>Camping closed in areas as necessary to protect cultural, wildlife, and natural processes.</p> <p>Designated access trails to cultural sites as necessary to protect cultural resources.</p> <p>No camping in cultural sites.</p> <p>Ropes and other climbing aids not allowed for access to structures, cultural sites, and nesting raptors.</p> <p>A CRMP would be written for the San Juan River.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs</p> <p>Lavender Mesa ACEC (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern)</p> <p>Managed to provide a baseline for rangeland studies through research and experiments.</p> <p>Excluded from land treatments or other improvements except for test plots and facilities necessary for study of the plant communities and restoration/reclamation activities.</p> <p>No campfires allowed.</p> <p>Managed to limit recreation use if vegetation communities are being adversely impacted.</p> <p>Managed as VRM Class II.</p> <p>Helicopter access allowed for scientific study and heliportable equipment.</p> <p>ROW avoidance area.</p> <p>Retained in public ownership.</p> <p>Excluded from private or commercial use of woodland products, including limited on-site collection of dead wood for campfires.</p> <p>Unavailable for livestock grazing, including grazing by saddle stock and pack animals allowed for access.</p> <p>Excluded from wildlife habitat improvements.</p> <p>Excluded from watershed control structures.</p> <p>Appropriate management response to wildland fire in accordance with the Moab District Fire Plan.</p> <p>Closed to OHV use.</p> <p>Managed to limit recreation use if cultural resources or scenic values are being damaged.</p> <p>SRPs: Commercial use; competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. All organized groups/activities must coordinate with the BLM. In general, for all groups/activities, an SRP or letter of agreement would be required if an organized group/activity group size exceeds 12 individuals.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Lavender Mesa ACEC</p> <p>Acres: 649 (Appendix A, Figure 2-9, Alternative E, Areas of Critical Environmental Concern)</p> <p>Managed to provide a baseline for rangeland studies through research and experiments.</p> <p>Excluded from land treatments or other improvements, except for test plots and facilities necessary for study of the plant communities and restoration/reclamation activities.</p> <p>No campfires allowed.</p> <p>Limit recreation use if vegetation communities are being adversely impacted.</p> <p>Limit recreation use if cultural resources or scenic values are being damaged.</p> <p>Managed as VRM Class II.</p> <p>Helicopter access limited to scientific study and heliportable equipment.</p> <p>ROW avoidance area.</p> <p>Closed to authorized or personal use of wood products.</p> <p>Unavailable for livestock grazing, including grazing by saddle stock and pack animals allowed for access.</p> <p>Excluded from wildlife habitat improvements.</p> <p>Excluded from watershed control structures.</p> <p>Appropriate management response to wildland fire in accordance with the agency approved fire management plan (FMP).</p> <p>Closed to OHV use.</p>
<p>Per 2020 ROD/MMPs</p> <p>Shay Canyon ACEC (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern)</p> <p>OHV and mechanized travel limited to designated routes.</p> <p>No surface disturbance for vegetation, watershed, or wildlife treatments/improvements.</p> <p>Grazing restricted to trailing only.</p> <p>With the exception of side canyons, hiking limited to existing and designated trails.</p> <p>Campfires not allowed.</p> <p>Unavailable for private or commercial use of woodland products, including on-site collection of dead wood for campfires.</p> <p>Recreation use may be limited if cultural and paleontological resources are impacted.</p> <p>Managed as VRM Class II.</p> <p>Closed to camping.</p> <p>ROW avoidance area.</p> <p>SRPs: Competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. All commercial and organized groups/activities must coordinate with the BLM. In general, for all events/activities, an SRP or letter of agreement would be required if an organized group/activity</p>	<p>Shay Canyon ACEC would not be carried forward.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative A.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
group size exceeds 35 individuals (day use only) (2020 ROD/MMPs).				
<p>Per 2008 Monticello RMP: Valley of the Gods ACEC – Relevant and Important Value: Scenic ACEC-58 Valley of the Gods (22,716 acres) (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern) is designated as an ACEC and is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • Managed as VRM Class I. • Available for vegetation treatments when consistent with VRM Class I. • Unavailable for private and/or commercial use of woodland products. • The BLM would pursue acquisition of state inholdings in this ACEC. • OHV use limited to designated roads and trails. • ROW exclusion area. • No campfires allowed. 	<p>Valley of the Gods ACEC – Relevant and Important Value: Scenic ACEC-58 22,716 acres (Appendix A, Figure 2-8, Alternatives B and C, Areas of Critical Environmental Concern) Managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I, except for 57 acres of highway access portals managed as VRM Class II. • Available for vegetation treatments when consistent with VRM Class I. • Closed to authorized or personal use of wood products. • ROW exclusion area. • Campfires would only be allowed in agency-provided rings in designated sites. 	Same as Alternative E.	Same as Alternative E.	Same as Alternative B, except that campfires would not be allowed.
<p>Per 2008 Monticello RMP: Indian Creek ACEC – Relevant and Important Value: Scenic ACEC-50 Indian Creek (3,936 acres) (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern) is designated as an ACEC and is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • Managed as VRM Class I. • Available for geophysical work if VRM Class I can be met. • Unavailable for private and/or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Available for livestock use. • Closed to OHV use. • All revegetation must be with native species naturally occurring in the vicinity. • Managed to limit recreation use if scenic values are being damaged. • Retained in public ownership. • ROW avoidance area. 	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>Indian Creek ACEC – Relevant and Important Value: Scenic ACEC-50 Acres: 3,936 (Appendix A, Figure 2-9, Alternative E, Areas of Critical Environmental Concern) Managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I. • Closed to authorized or personal use of wood products, except for limited on-site collection of dead wood for campfires. • Closed to OHV use. • All revegetation would be with native species naturally occurring in the ecological site, based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, agencies would collaborate with the BEC to identify desirable nonnative seeds that may be used in limited situations to protect BENM objects. • Limit recreation use if scenic values are being damaged. • ROW exclusion area.
No similar management.	No similar management.	No similar management.	<p>John's Canyon Paleontological ACEC (1,542 acres) – Relevant and Important Value: Paleontological, Cultural Surface-disturbing activities would be limited to those necessary to protect BENM objects. Surface-disturbing activities would require paleontological surveys prior to implementation. Limit recreation use if cultural resources are being damaged. ROW exclusion area. Appropriate management response to wildland fire in accordance with the agency-approved FMP. OHV limited.</p>	<p>John's Canyon Paleontological ACEC (11,465 acres) – Relevant and Important Value: Paleontological, Cultural, Scenic, Fish and Wildlife, Threatened Species (Navajo sedge [<i>Carex specuicola</i>]) Surface-disturbing activities would be limited to those necessary to protect BENM objects. Surface-disturbing activities would require paleontological surveys prior to implementation. Limit recreation use if vegetation communities are being adversely impacted. Limit recreation use if cultural resources or scenic values are being damaged. Managed as VRM Class I. ROW exclusion area. Appropriate management response to wildland fire in accordance with the agency-approved FMP.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
				Vegetation management actions would require surveys for threatened and endangered plant species and avoidance of those species prior to implementation. OHV limited.
No similar management.	No similar management	No similar management	<p>Aquifer Protection ACEC (1,012,371 acres) – Relevant and Important Value: Natural System/Aquifer Recharge, Scenic, Cultural, Paleontological</p> <p>Surface-disturbing activities would be limited to those necessary to protect BENM objects.</p> <p>Manage discretionary uses to avoid adversely impacting vegetation communities and groundwater-dependent ecosystems.</p> <p>Management response to wildland fire would be in accordance with the agency-approved FMP.</p> <p>OHV Limited.</p> <p>Require a hydrologic study for all proposed groundwater withdrawals.</p> <p>Prohibit new storage tanks for hazardous materials. Avoid use of hazardous materials, unless otherwise addressed in this management plan.</p> <p>Collaborate with the BEC on the development of mitigation requirements and best management practices for discretionary uses.</p>	<p>Aquifer Protection ACEC (85,856 acres) – Relevant and Important Value: Natural System/Aquifer Recharge, Scenic, Cultural, Paleontological</p> <p>Surface-disturbing activities would be limited to those necessary to protect BENM objects.</p> <p>Manage discretionary uses to avoid adversely impacting vegetation communities and groundwater-dependent ecosystems.</p> <p>Management response to wildland fire would be in accordance with the agency-approved FMP.</p> <p>OHV limited.</p> <p>VRM Class I in Outback and Remote Zones. VRM Class II in Front Country and Passage Zones.</p> <p>Require a hydrologic study for all proposed groundwater withdrawals.</p> <p>Prohibit new storage tanks for hazardous materials. Avoid use of hazardous materials, unless otherwise addressed in this management plan.</p> <p>Collaborate with the BEC on the development of mitigation requirements and best management practices for discretionary uses.</p>
<p>Per 2008 Monticello RMP</p> <p>Suitable – Scenic:</p> <ul style="list-style-type: none"> • Colorado River Segment 2 • Colorado River Segment 3 <p>Suitable – Wild:</p> <ul style="list-style-type: none"> • Dark Canyon • San Juan River Segment 5 <p>Identified as not suitable:</p> <ul style="list-style-type: none"> • Arch Canyon • Fable Valley • Indian Creek • San Juan River Segment 1 • San Juan River Segment 2 	Same as Alternative E	Same as Alternative E.	Same as Alternative E.	<p>Suitable WSR segments would continue to be managed according to the tentative classifications and suitability recommendations in the 2008 MFO RMP and ROD. WSR evaluations would be continued in collaboration with the BEC regarding designations.</p> <p>Suitable – Scenic (Appendix A, Figure 2-9, Alternative E, Areas of Critical Environmental Concern):</p> <ul style="list-style-type: none"> • Colorado River Segment 2 • Colorado River Segment 3 <p>Suitable – Wild (Appendix A, Figure 2-8, Alternative D, Areas of Critical Environmental Concern):</p> <ul style="list-style-type: none"> • Dark Canyon • San Juan River Segment 5 <p>Identified as not suitable:</p> <ul style="list-style-type: none"> • Arch Canyon • Fable Valley • Indian Creek • San Juan River Segment 1 • San Juan River Segment 2
<p>Per 2008 Monticello RMP</p> <p>Colorado River Segment 2 (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern)</p> <p>Colorado River Segment 2 is identified as suitable for designation into the NWSR System. The segment specifics include the following:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Scenic • Size: 809 acres, 759 within the Planning Area • Location: State lands near RM 44 to approximately RM 38.5 (5.5 miles). • Total river miles: 6.8 • BLM river miles: 6.8 	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>Colorado River Segment 2 (Appendix A, Figure 2-9, Alternative E, Areas of Critical Environmental Concern)</p> <p>Colorado River Segment 2 is identified as suitable for designation into the NWSR System. The segment specifics include the following:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Scenic • Size: 809 acres, 759 within the Planning Area • Location: State lands near RM 44 to approximately RM 38.5 (5.5 miles). • Total river miles: 6.8 • BLM river miles: 6.8 <p>This segment is managed with the following prescriptions:</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>This segment is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class II. • Motorized boat use allowed on the river. • ROW avoidance area. 				<ul style="list-style-type: none"> • VRM Class I. • Motorized boat use allowed on the river. • ROW exclusion area.
<p>Per 2008 Monticello RMP Colorado River Segment 3 (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern) Colorado River Segment 3 is identified as suitable for designation into the NWSR System. The segment specifics include the following:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Scenic • Size: 987 acres, 752 within Planning Area • Location: From approximately RM 37.5 at state land to the boundary of Canyonlands National Park near RM 31 (6.5 miles). • Total river miles: 6.5 • BLM river miles: 6.5 <p>This segment is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I. • Closed to OHV use. • Motorized boat use allowed on the river. • ROW exclusion area. 	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>Colorado River Segment 3 (Appendix A, Figure 2-9, Alternative E, Areas of Critical Environmental Concern) Colorado River Segment 3 is identified as suitable for designation into the NWSR System. The segment specifics include the following:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Scenic • Size: 987 acres, 752 within Planning Area • Location: From approximately RM 37.5 at state land to the boundary of Canyonlands National Park near RM 31 (6.5 miles). • Total river miles: 6.5 • BLM river miles: 6.5 <p>This segment is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I. • Closed to OHV use (see Section 2.4.21, Travel and Transportation Management, and Appendix A, Figure 2-37, Alternative E, off-highway vehicle area designation; and Appendix H: Travel Management Plan Criteria). • Motorized boat use allowed on the river. • ROW exclusion area.
<p>Per 2008 Monticello RMP Dark Canyon (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern) The Dark Canyon segment is identified as suitable for designation into the NWSR System. The segment specifics include the following:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Wild. • Size: 1,888 acres, 1,887 within Planning Area • Location: USDA Forest Service boundary to Glen Canyon NRA below Young's Canyon. • Total river miles: 13.6 • BLM river miles: 6.4 <p>This segment is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I. • Closed to OHV use. 	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>Dark Canyon (Appendix A, Figure 2-9, Alternative E, Areas of Critical Environmental Concern) The Dark Canyon segment is identified as suitable for designation into the NWSR System. The segment specifics include:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Wild. • Size: 1,888 acres, 1,887 within Planning Area • Location: USDA Forest Service boundary to Glen Canyon NRA below Young's Canyon. • Total river miles: 13.6 • BLM river miles: 6.4 <p>This segment is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I. • Closed to OHV use (see Section 2.4.21, Travel and Transportation Management; Appendix A, Figure 2-37, Alternative E, off-highway vehicle area designation; and Appendix H: Travel Management Plan Criteria). • ROW exclusion area.
<p>Per 2008 Monticello RMP San Juan River Segment 5 (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern) WSR-17 San Juan River Segment 5 is identified as suitable for designation into the NWSR System. The segment specifics include the following:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Wild. • Size: 1,875 acres (1,247 within Planning Area) • Location: RM 28 to Glen Canyon NRA at RM 45 • Total river miles: 17.3 • BLM river miles: 17.3 <p>WSR-18</p>	Same as Alternative E.	<p>Same as Alternative E except:</p> <ul style="list-style-type: none"> • Downstream motorized boat travel is allowed at low, wakeless speed. Upstream travel is prohibited, except for emergency purposes. 	Same as Alternative C.	<p>WSR-17 San Juan River Segment 5 is identified as suitable for designation into the NWSR System. The segment specifics include:</p> <ul style="list-style-type: none"> • Recommendation: Suitable—Wild. • Size: 1,875 acres (1,247 within Planning Area) • Location: RM 28 to Glen Canyon NRA at RM 45 • Total river miles: 17.3 • BLM river miles: 17.3 • BENM river miles: 11 <p>WSR-18 This segment is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>This segment is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • VRM Class I. • Closed to OHV use. • ROW exclusion area. 				<ul style="list-style-type: none"> • Closed to OHV use. • ROW exclusion area. • Motorized boat use not allowed on the river.
<p>USDA Forest Service WSRs</p> <p>An eligibility study was conducted for stream segments on the Manti-La Sal National Forest in 2003 with several subsequent reevaluations. The USDA Forest Service completed a final EIS and signed the ROD for the WSR Suitability Study for National Forest System Lands in Utah in 2008. The study evaluated the suitability of 86 eligible rivers (840 miles) on the national forests in the state of Utah, including the 10 rivers or systems identified as eligible in the Manti-La Sal National Forest, for recommendation for inclusion in the NWSR System. The USDA Forest Service determined that no river segments in what is now BENM were suitable for inclusion in the NWSR System; therefore, no stream segments are managed as suitable or eligible.</p>	No additional WSR inventory would occur on stream segments on NFS lands under the RMP/EIS.	No additional WSR inventory would occur on stream segments on NFS lands under the RMP/EIS.	No additional WSR inventory would occur on stream segments on NFS lands under the RMP/EIS.	No additional WSR inventory would occur on stream segments on NFS lands under the RMP/EIS.
<p>Per 2008 Monticello RMP</p> <p>WSA-2</p> <p>The Monticello FO manages nine WSAs (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern) (368,000 acres as identified in the Statewide Report to Congress (365,872 GIS acres): Mancos Mesa (50,846 acres), Grand Gulch Instant Study Area (ISA) Complex (105,194), Road Canyon (52,344), Fish Creek Canyon (46,097), Cheese Box Canyon (14,871), Dark Canyon ISA Complex (67,840), Butler Wash (22,051), Indian Creek (6,469), and South Needles (159).</p> <p>Per 2020 ROD/MMPs</p> <p>If WSAs within BENM are released by Congress, the agencies would conduct a land use plan amendment of this RMP/EIS with accompanying NEPA analysis to determine how those lands would be managed.</p> <p>BENM includes all of the Bridger Jack Mesa (5,233 acres), Fish Creek Canyon (31.8 acres), and Mule Canyon (6,014 acres) WSAs (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern).</p>	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>BENM manages 11 WSAs (Appendix A, Figure 2-10, Alternatives A–E, special designations), 381,760 acres as identified in the Statewide Report to Congress (377,118 GIS acres): Mancos Mesa (50,846 acres), Grand Gulch WSA (105,194 acres), Road Canyon (52,344 acres), Fish Creek Canyon (46,097 acres), Mule Canyon (6,014 acres), Cheese Box Canyon (14,871 acres), Dark Canyon WSA (67,840 acres), Butler Wash (24,312 acres), Bridger Jack Mesa (5,233 acres), Indian Creek (6,469 acres), and South Needles (159 acres).</p> <p>When any WSA, in whole or in part, is released from wilderness consideration by Congress, continue past management of such released lands, unless otherwise specified by Congress in its releasing legislation, in a manner to ensure protection of BENM objects, the following would occur:</p> <ul style="list-style-type: none"> • Re-inventories for wilderness characteristics of all released WSAs not designated as wilderness; all lands determined to have wilderness characteristics, in collaboration with BEC, would immediately be managed to protect wilderness characteristics. <p>Until the above are completed, and all steps necessary have been completed to establish management of the released areas moving forward, no proposals/actions would occur in the released areas unless essential for the protection of BENM objects.</p> <p>Following such interim steps, the agencies, in collaboration with the BEC and Tribal Nations, would conduct an amendment to the RMP/EIS, with accompanying NEPA analysis, to determine how those lands would be managed in the long term.</p>
<p>Per 2020 ROD/MMPs</p> <p>WSAs would continue to be managed per BLM Manual 6330, including being managed as VRM Class I, closed to OHV use, and ROW exclusion areas.</p>	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).
<p>Per 2020 ROD/MMPs</p> <p>Bridger Jack Mesa WSA (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern).</p> <p>The Bridger Jack Mesa area would be managed as part of the Indian Creek SRMA.</p> <p>Unavailable for livestock grazing, including grazing by saddle stock and pack animals allowed for access.</p>	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires.</p> <p>Campfires would be restricted to fire rings, where available. If not available, Leave No Trace principles should be practiced.</p> <p>SRPs: Competitive events, vending, and OHV and mechanized uses would not be allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities, an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals or eight pack animals.</p>				
<p>Per 2020 ROD/MMPs</p> <p>Mule Canyon WSA (Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern).</p> <p>Stock use (in-canyon) would not be allowed, with the exception of stock associated with permitted livestock grazing.</p> <p>SRPs: Competitive events, vending, and OHV and mechanized use would not be allowed. All organized events/activities must involve BLM coordination. In general, for all events/activities, an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals (limited to 12 individuals in-canyon). If monitoring indicates significant impacts to BENM objects, group size thresholds would be reduced during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment.</p> <p>An Individual Special Recreation Permit for private, non-commercial special area use would continue to be required for in-canyon day and overnight use. Group size is limited to 12.</p> <p>Camping: In-canyon camping could be limited to certain designated areas if resource or cultural damage occurs. Dispersed vehicle camping would not be allowed in the WSA. Campfires would not be allowed.</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.10.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.10.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.10.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.10.2).</p>
<p>Per 2008 Monticello RMP</p> <p>Within the area managed by the Monticello FO, there is an area totaling 2,261 acres contiguous to the Butler Wash WSA that was studied as a boundary variation during the wilderness review mandated by Congress in FLPMA Sections 603(a) and (b). These lands were addressed in the <i>Utah BLM Statewide Wilderness Final Environmental Impact Statement</i> (BLM 1990) and were recommended for congressional wilderness designation in the <i>Utah Statewide Wilderness Study Report</i> (October 1991). This recommendation was forwarded by the president of the United States to Congress in 1993. The lands would continue to be managed in a manner that does not impair their suitability for congressional designation in accordance with FLPMA Section 603(c). Subject to valid existing rights, the only case-by-case actions that would be considered would be those where it is determined that wilderness suitability would not be adversely impacted. Lands within this administratively endorsed area are not under interim management policy management. RMP decisions protect those lands until Congress acts.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>The area contiguous to the Butler Wash WSA studied as an Administratively Endorsed Area would be managed under WSA policy until designated or released by Congress.</p>
<p>Per 2008 Monticello RMP</p> <p>WSA management prescriptions, as stipulated in the interim management policy, would take precedence over other</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>WSA management prescriptions, as stipulated in WSA policy, would take precedence over other management prescriptions throughout this RMP/EIS, unless the other management prescriptions are more restrictive.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
management prescriptions throughout this RMP/EIS, unless the other management prescriptions are more restrictive.				
Per 2008 Monticello RMP WSAs are managed as VRM Class I.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Per 2008 Monticello RMP One way in the Fish Creek WSA totaling 0.08 mile would remain conditionally open to motorized recreation use in order to access the Moon House site. In addition, four ways would remain available for administrative access only and are not available for motorized recreation use: <ul style="list-style-type: none"> • Two ways in the Grand Gulch ISA-Pine Canyon and Slickhorn Units totaling 3.1 miles and located east of Pine Canyon and Point Lookout areas. • One way in the Fish Creek WSA-Lower Baullie Mesa totaling 4.93 miles. • One way in the Road Canyon WSA-Perkins Point totaling 2.67 miles. 	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).
Per 2008 Monticello RMP The Hole-in-the-Rock Trail is managed for heritage tourism in consultation with the Utah State Historic Preservation Office and Native American Tribes, as well as interested stakeholder groups.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	The Hole-in-the-Rock Trail is managed for heritage tourism in consultation with the Utah State Historic Preservation Office, interested stakeholder groups, the BEC, and Tribal Nations.
Per 2008 Monticello RMP Segments of the Hole-in-the-Rock Trail would be identified and evaluated for historic integrity and appropriate use.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	As part of implementation-level planning, segments of the Hole-in-the-Rock Trail would be identified and evaluated for historic integrity and appropriate use.
Per 2008 Monticello RMP Landmark (sites, features) would be interpreted only if the action would not impact the values of the site/landmark.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Landmark (structures, features) on historic trails would be interpreted only if the action would not impact the values of the site/landmark. This would be determined in collaboration with the BEC.
Per 1986 Manti-La Sal LRMP Dark Canyon Wilderness (USDA Forest Service) Specific management actions for Dark Canyon Wilderness can be found in the LRMP.	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).
Per 1986 Manti-La Sal LRMP IRAs USDA Forest Service Specific management actions for the IRAs can be found in the LRMP.	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).
Per 1986 Manti-La Sal LRMP Cliff Dwellers Pasture RNA USDA Forest Service Specific management actions for the RNA can be found in the LRMP.	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).	See Management Actions Common to All Action Alternatives (Section 2.4.10.2).

2.4.11. Wildlife and Fisheries

2.4.11.1. GOALS AND OBJECTIVES

- Manage to protect large undisturbed blocks of terrestrial and aquatic habitat and, where possible, consolidate and create larger protected blocks of habitat to ensure habitat connectivity.
- Maintain, enhance, and/or restore native aquatic, avian, and terrestrial habitat by improving quality, increasing quantity/connectivity. For biologically diverse and healthy ecosystems, consider spatial and temporal habitat needs (e.g., seasonal, migratory, nest/brood).
- Promote and restore healthy riparian habitat throughout BENM.
- Maintain and preserve aquatic connectivity through land acquisition and maintenance of instream flows and by removal of barriers where practicable.

- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.11.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would collaborate with the BEC to identify and avoid adverse impacts on native aquatic, avian, and terrestrial species habitat, connectivity, and movement. Where adverse impacts cannot be avoided, agencies would manage to ensure no net loss of native species habitat, connectivity, and movement.
- Manage habitat for species conservation to incorporate Tribal and Utah statewide conservation strategies, in coordination with Utah Division of Wildlife Resources (UDWR) and U.S. Fish and Wildlife Service (USFWS).
- During observed active nesting period, conduct surveys for nesting native birds prior to implementation of projects. If nesting birds are observed, avoid discretionary actions that would impact these nesting birds for the duration of the nesting period.
- Fence construction or reconstruction including but not limited to OHV routes and trails would be sited and designed to avoid hazards and barriers to wildlife movement.
- Vegetation management timing and activities would account for key life history requirements for resident and migratory birds, including avoiding and minimizing impacts.
- Maintain, enhance, and/or restore habitat through vegetation management or other actions (e.g., instream habitat improvement) to support sustainable populations of native aquatic, avian, and terrestrial wildlife species.
- Collaborate with the BEC and local, state, federal, and Tribal partners for inventory and monitoring and in program and project design to address management issues affecting terrestrial and aquatic wildlife species and their habitats across jurisdictional boundaries.
- Provide for habitat for populations of the native and existing vertebrate and invertebrate species found on BENM lands.
- Collaborate with the BEC, Tribal Nations, and the State of Utah in management of habitats for species important to Tribal Nations (identified according to Traditional Ecological Knowledge and Tribal expertise), including their prey, cover, forage, habitat, and connectivity, and for species from the Utah Wildlife Action Plan as amended/updated.
- Agencies would collaborate with the BEC and the State of Utah to incorporate Traditional Indigenous Knowledge to manage crucial big game habitat during key seasons. This could include closure of habitat areas to visitation or to certain uses (e.g., OHVs and commercial filming) on a seasonal basis to provide for resource rest, protect wildlife during key life history periods, or to allow for traditional/ceremonial use.
- Agencies would collaborate with the BEC to incorporate Traditional Indigenous Knowledge to determine seasonal restrictions on land use authorizations affecting wildlife habitat.
- Agencies would implement, as appropriate, best management practices (BMPs) to avoid, minimize, and/or mitigate impacts to wildlife species on BENM (see Appendix G: Best Management Practices).

2.4.11.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-10. Alternatives for Wildlife and Fisheries

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>BLM-Administered Lands Per 2020 ROD/MMPs Wildlife habitat objectives would be considered in all reclamation activity. Priority would be given to meeting or making progress toward meeting <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997) or USDA Forest Service desired conditions for rangelands (BLM 2020).</p> <p>NFS Lands Per 1986 Manti-La Sal LRMP Wildlife Habitat Management</p> <ul style="list-style-type: none"> • Provide for habitat for management indicator species. • Maintain and/or improve habitat and habitat diversity for minimum viable populations of existing vertebrate wildlife species. <ul style="list-style-type: none"> ◦ Manage vegetative composition so as to maintain at least 50% of current (1980) habitat for existing and approved introduced wildlife species. • Planned vegetative management treatments in the mature and/or old structural groups in a landscape that is at or below the desired percentage of land area in mature and old structural stages (40% conifer, 30% aspen) should be designed to maintain or enhance the characteristics of 	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>these structural stages to provide for habitat needs of cavity-nesting birds, raptors, and small animals as follows:</p> <ul style="list-style-type: none"> ○ Coordination with project work or resource uses. ○ Selecting and utilizing live trees to create snags. <ul style="list-style-type: none"> ▪ A snag is defined as a completely or partially dead standing tree at least 4 inches DBH and at least 6 feet in height. ▪ Maintain various size classes of standing snags with the approximate density per 100 acres based on broad vegetative types. <ul style="list-style-type: none"> – No./100 Acres <ol style="list-style-type: none"> 1) Ponderosa pine 200 (18 inches DBH and 30 feet tall) 2) Mixed conifer (spruce/fir/Douglas-fir) 300 (18 inches DBH and 30 feet tall) 3) Aspen 200 (8 inches DBH and 15 feet tall) 4) Pinyon-juniper 15 5) Riparian 120 • Manage down timber to provide habitat for wildlife. • When initiating vegetative management treatments, prescriptions should be designed to retain the following minimum amount and size of down logs and woody debris: ponderosa pine-30 logs/10 acres and 50 tons/10 acres coarse woody debris, mixed conifer 50 logs/10 acres and 100 tons/10 acres coarse woody debris, and aspen 50 logs/10 acres and 30 tons/10 acres coarse woody debris. • Manage waters capable of supporting self-sustaining fish populations to provide for those populations. • Manage stream habitat to at least 50% of potential where existing self-sustaining fisheries occur. • Proposed management activities which may cause unfavorable conditions in existing fisheries would include mitigation measures. <p>Wildlife Habitat Improvement and Maintenance</p> <ul style="list-style-type: none"> • Maintain or improve habitat capability through direct treatment of vegetation, soil, and/or water. • Manage non-commercial aspen stands in mixed age groups to provide a source of forage. • Give wildlife funding priority to habitat improvement projects which are jointly or cooperatively funded with the states. • Use both commercial and non-commercial silvicultural practices to accomplish wildlife habitat objectives. • Maintain a medium to high edge contrast between tree stands created by even-aged management. • Contrast by age class, measured by H high, M medium, and L low. • Provide for conservation pools and, as appropriate, recreation facilities to meet resource protection needs in projects for new reservoir construction or reconstruction of existing reservoirs. • Conservation pools would be required where a potential exists for carry over fisheries and recreation use is appropriate. <p>Semi-primitive Recreation Use (SPR)</p> <ul style="list-style-type: none"> • Manage wildlife and fish habitat to be compatible with the recreation use. Locate structural and design nonstructural improvements to meet Visual Quality Objectives. • Maintain at least 30% of shrub plants in mature age and at least 10% in young age classes. 				

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> Maintain at least two shrub species on shrublands capable of growing two or more shrub species. <p>Riparian Area Management Not-Mapped (RPN)</p> <ul style="list-style-type: none"> Provide habitat diversity through vegetation treatments, and/or structural developments in conjunction with other resource activities, designed to maintain or approve wildlife or fisheries habitat. Provide habitat for viable populations of native vertebrate species of fish and wildlife within existing ranges. Maintain a current fish habitat inventory in cooperation with state wildlife agencies. Provide for instream flows to support a sustained yield of natural fisheries resources. <p>Municipal Water Supply (MWS)</p> <ul style="list-style-type: none"> Permanent wildlife openings or other habitat improvements may be installed, provided they can be done without adversely affecting water quality. 				
<p>Per 1986 Manti-La Sal LRMP Watershed Protection/Improvement (WPE)</p> <ul style="list-style-type: none"> Provide big game forage and habitat needs through manipulation of habitat or wildlife structures, providing they do not result in damage to the watershed. <p>Research, Protection, and Interpretation of Lands and Resources (RPI)</p> <ul style="list-style-type: none"> Prohibit any direct wildlife habitat manipulation that would detract from those values for which the unit is established. Manage, to the extent possible, potential existing long-term impacts on potential or existing units consistent or compatible with wildlife and fish habitat prescriptions from adjacent management units. <p>Location of Utility Corridors (UC)</p> <ul style="list-style-type: none"> Manage, to the extent possible, consistent or compatible with wildlife and fish habitat prescriptions from adjacent management units. 	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>
<p>Per 2020 ROD/MMPs</p> <p>Ground-disturbing actions that adversely impact fish and wildlife species and habitats would be avoided where possible. Where unavoidable disturbances are required, the BLM and USDA Forest Service would follow current agency policy regarding the application of appropriate minimization and mitigation measures.</p>	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>
<p>Per 2020 ROD/MMPs</p> <p>Maintain, restore, and/or improve critical habitat requirements for native fish and amphibian and aquatic species, including restoration and enhancement of backwater, side channel, and floodplain habitats. Manage habitat to minimize disturbance except when conducting riparian and aquatic habitat improvement projects.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Maintain, restore, and/or improve critical habitat requirements for native fish and amphibian and aquatic species, including restoration and enhancement of backwater, side channel, and floodplain habitats, and monitoring of groundwater condition, water quality, and cumulative effects on watershed health. Manage habitat to minimize disturbance. Maintain or provide habitat for culturally and ecologically important species, including monitoring of forage, prey species, hiding cover, migration routes, and connectivity. Manage crucial habitat for these species to minimize disturbance with the exception of habitat maintenance projects or vegetation treatments that are expected to benefit culturally and ecologically important species.</p>
<p>No management restrictions related to recreational water pumping and purification.</p>	<p>Same as Alternative A.</p>	<p>Agencies, in collaboration with the BEC would monitor waterbodies to restrict recreational water pumping and purification for SRPs and Individual Special Recreation Permits, as necessary, to maintain existing habitat for aquatic organisms.</p>	<p>Same as Alternative C except encouragement for recreationists to not pump from any water sources.</p>	<p>The agencies, working collaboratively with the BEC, would monitor water resources to identify whether water pumping for recreational use needs to be limited in any specific areas in order to protect Monument objects, as informed by Traditional Indigenous Knowledge.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
See the Cedar Mesa SRMA (see Section 2.4.20, Recreation and Visitor Services)	See Cedar Mesa SRMA (see Section 2.4.20, Recreation and Visitor Services).	See Cedar Mesa SRMA (see Section 2.4.20, Recreation and Visitor Services).	Prohibit swimming in in-canyon stream/pool habitat in BENM.	Prohibit bathing in in-canyon stream/pool habitat in BENM except where inconsistent with the Religious Freedom Restoration Act or other applicable laws. Bathing in canyon stream/pool habitat would not be prohibited where such prohibition constitutes a substantial burden on religious practices.
Per 2020 ROD/MMPs In areas lacking proper water distribution or natural water sources, allow for installation of precipitation catchments (guzzlers) or the development of springs on rangelands.	In areas lacking proper water distribution or natural water sources, allow for maintenance of existing and installation of new precipitation catchments (guzzlers) or the development of springs. Maintenance should include replacement of nonfunctioning systems.	Same as Alternative B.	Allow the maintenance of existing precipitation catchments but do not allow the installation of new precipitation catchments unless necessary to protect BENM objects. Maintenance should include replacement of nonfunctioning systems.	Allow the maintenance of existing precipitation catchments but do not allow the installation of new precipitation catchments unless necessary to protect BENM objects (e.g., in places heavily accessed by culturally and ecologically important wildlife). Maintenance should include replacement of nonfunctioning systems. Livestock access to precipitation catchments would be prohibited. Precipitation catchments would be installed in a manner that ensures wildlife do not become entrapped within the catchment structure.
NFS Lands Per 1986 Manti-La Sal LRMP For macroinvertebrates, improve to and maintain a good or above Density Index (DAT) of 11 to 17, a standing crop of 1.6 to 4.0, and a Biotic Condition Index (BCI) of 75 or above, based on techniques developed by UDWQ (MMI and RIVPACS) or comparable methods.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
BLM-Administered Lands Per 2020 ROD/MMPs Maintain or provide habitat requirements for deer and elk, including forage areas, hiding cover, and migration routes when detected. Manage crucial deer and elk habitat to minimize disturbance except when conducting habitat projects for big game. NFS Lands Per 1986 Manti-La Sal LRMP Deer and Elk <ul style="list-style-type: none"> Maintain adequate hiding cover around calving areas. Optimum habitat mix for the daily normal range is 25% hiding cover, 15% thermal cover, 10% hiding or thermal cover, and 50% foraging area. In areas of historic water shortage during the dry season of the year, develop water as appropriate. Manage key deer and elk habitat so as to minimize disturbance during the period of use. 	Collaborate with the BEC and the State of Utah to maintain or provide habitat requirements for big game species important to Tribal Nations and/or State of Utah designated crucial habitat. This would include forage areas, hiding cover, and migration routes. Manage to have no net loss of these habitats.	Same as Alternative B.	Same as Alternative B.	Collaborate with BEC to maintain or provide habitat for culturally and ecologically important species, including monitoring of forage, prey species, hiding cover, migration routes, and connectivity. Manage crucial habitat for these species to minimize disturbance with the exception of habitat maintenance projects or vegetation treatments that are expected to benefit culturally and ecologically important species.
Per 2020 ROD/MMPs Provide habitat needs for Abert's squirrel in ponderosa pine habitat. Maintain occupied habitats to produce good habitat condition (one squirrel/10 acres) to very good habitat condition (two to four squirrels/10 acres). Maintain and/or improve habitat conditions on at least 60% of the ponderosa pine habitat type. NFS Lands Per 1986 Manti-La Sal LRMP Abert's Squirrel <ul style="list-style-type: none"> Habitat in ponderosa pine; silvicultural prescriptions for ponderosa pine on the Monticello Ranger District should consider management as follows: <ul style="list-style-type: none"> Protect habitat by maintaining occupied sites to produce good to very good habitat. Maintain and/or improve good (one squirrel/10 acres) to very good (two to four squirrels/10 acres) habitat conditions on at least 60% of the total ponderosa pine 	Maintain Abert's squirrel ponderosa pine habitat components related to nest/feed trees basal area, canopy cover, and understory based on best available science and Traditional Indigenous Knowledge.	Same as Alternative B.	Same Alternative B.	Maintain Abert's squirrel ponderosa pine habitat components based on best available western and indigenous science, Tribal policies, and Traditional Indigenous Knowledge.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>habitat type. Stands heavily diseased or insect infested would be considered on a site-by-site basis to determine improvement needs.</p> <ul style="list-style-type: none"> • Use slash and silvicultural practices that deter shrub growth and provide ponderosa pine reproduction but do not encourage habitat for rodents that compete for Abert's squirrel habitat components. • Leave Gambel oak over 6 inches DBH in association with ponderosa pine. • Based on Wildlife Society Bulletin 12:408-44, 1984. 				
<p>Per 2020 ROD/MMPs Agencies would work with stakeholder and volunteer groups to educate climbers on methods to protect significant natural and cultural resources.</p>	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
<p>Per 2020 ROD/MMPs From April 1 to July 31, or if nesting birds are observed, avoid or minimize surface-disturbing activities and vegetation-altering projects and broadscale use of pesticides in identified and occupied priority migratory bird habitat.</p>	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).	During observed active nesting periods for raptors and migratory birds (as identified by monitoring), proposed projects would be required to conduct surveys for nesting birds; if nesting birds are observed, avoid or minimize surface-disturbing activities and vegetation-altering projects, and broad-scale use of pesticides in identified and occupied migratory bird habitat. Agencies would collaborate with the BEC and Tribal Nations to identify avoidance and mitigation requirements at the project-specific implementation level.
<p>Per 2008 Monticello RMP Migratory Birds</p> <ul style="list-style-type: none"> • Comply with the MBTA and implement Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) during all activities to protect habitat for migratory birds. Management would emphasize birds listed on the current USFWS BCC (USFWS 2002 or as updated), and Partners in Flight priority species (as updated). As specific habitat needs and population distribution to BCC and Partners in Flight priority species the Partners In Flight Avian Conservation Strategy (UDWR 2000, as updated) priority species are identified, the BLM would use adaptive management strategies to further conserve habitat and avoid impacts to these species. • During nesting season for migratory birds (May 1–July 30), avoid or minimize surface- disturbing activities and vegetative-altering projects and broadscale use of pesticides in identified occupied priority migratory bird habitat. • Prioritize the maintenance and/or improvement of lowland riparian, wetlands, and low and high desert shrub communities, which are the four most important and used habitat types by migratory birds in the Monticello PA. • Prevent the spread of invasive and nonnative plants, especially cheatgrass, salt cedar, and Russian olive. Strive for a dense understory of native species with a reduction in salt cedar and improvement of cottonwood and willow regeneration. • As a supplement to comply with Executive Order 13186, the Bird Habitat Conservation Areas identified in the Coordinated Implementation Plan for Bird Conservation in Utah (2005, or as updated) would receive priority for conducting bird habitat conservation projects through cooperative funding initiatives such as the Intermountain West Joint Venture. • Land use decisions that concern migratory birds and their habitats would consider the goals and objectives established in respective bird conservation strategies: bird conservation plans and the Utah Wildlife Action Plan. 	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.11.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> Management of habitat for species conservation would incorporate statewide conservation strategies. 				
<p>Per 2008 Monticello RMP Bighorn Sheep</p> <ul style="list-style-type: none"> Five mesa tops (56,740 acres) within the crucial bighorn sheep habitat have been identified as areas of potential conflict between bighorn sheep and activities that cause surface disturbance, resulting in permanent loss of bighorn sheep habitat. Bighorn sheep habitat improvement projects would be prioritized in these areas. Livestock grazing and associated range improvement projects are not allowed on the five mesa tops. Any future proposal for a change in kind of livestock from cattle to sheep in crucial desert bighorn sheep habitat would be denied in order to prevent competition for forage and the transmission of disease from domestic to wild sheep. Adhere to the recommendations in the BLM Bighorn Sheep Rangeland Management Plan (BLM 1993, as revised) and the Utah BLM Statewide Desert Bighorn Sheep Management Plan (BLM 1996, as revised), where practicable. 	<p>Same as Alternative A with the following exception: Any future proposal for a change in the kind of livestock from cattle to sheep would be evaluated based on best available science. Proposals in crucial desert bighorn sheep habitat would be denied in order to prevent competition for forage and the transmission of disease from domestic to wild sheep.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Five mesa tops within crucial bighorn sheep habitat referenced in Presidential Proclamation 10285 have been identified as areas of potential conflict between bighorn sheep and activities that cause surface disturbance resulting in permanent loss of bighorn sheep habitat. Bighorn sheep habitat improvement projects would be prioritized in these areas. Continued monitoring of bighorn sheep priority habitat, connectivity corridors, population size, health, long-term viability, and conflicts with surface-disturbing activities would proceed in collaboration with the BEC and Tribal and agency programs. Continued monitoring of the five mesa tops and other existing and potential bighorn sheep habitat sites would be conducted in coordination with the BEC.</p> <p>Livestock grazing and associated range improvement projects are not allowed on the five mesa tops and would not be allowed in any habitat priority areas or connectivity corridors for bighorn sheep identified by future monitoring.</p> <p>In order to prevent competition for forage and the transmission of disease from domestic to wild sheep, no change in the kind of livestock from cattle to sheep in crucial desert bighorn sheep habitat would be allowed.</p> <p>No allotments would be converted from cows and horses to domestic sheep or goats within at least a 10-mile buffer of bighorn sheep habitat and connectivity corridors to reduce risk of disease transmission. For any allotments proposed to be converted from cows or horses to domestic sheep or goats, the agencies would notify the BEC prior to any transfer being approved, so the BEC can provide Traditional Indigenous Knowledge to inform the decision about the proper care and management of bighorn sheep. The agencies would collaborate with the BEC and BEC Tribal teams to incorporate any Traditional Indigenous Knowledge regarding required separation or buffer zones to protect bighorn sheep.</p> <p>Adhere to the recommendations in the BLM Bighorn Sheep Rangeland Management Plan (BLM 1993, as revised) and the Utah BLM Statewide Desert Bighorn Sheep Management Plan (BLM 1996, as revised), and Tribal policies regarding bighorn sheep stewardship, where practicable.</p>
<p>Per 2008 Monticello RMP Introduction, Transplantation, Augmentation, and Reestablishment</p> <p>The BLM would continue to cooperate with and provide support to UDWR in reintroducing native fish and wildlife species into historic or suitable ranges, as determined appropriate through case-by-case NEPA analysis.</p> <p>Introduction, transplantation, augmentation, and re-establishment of both native and naturalized species would be considered and would include but may not be limited to pronghorn, desert bighorn sheep, wild turkey, beaver, chukar, Colorado River cutthroat trout, and endangered Colorado River fish species.</p>	<p>Agencies would collaborate with the BEC, UDWR, and USFWS in the introduction, transplantation, augmentation, and re-establishment of native species. Priority would be given to species that provide for traditional uses and ceremonies.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Agencies would coordinate with the BEC, Tribal Nations, UDWR, and USFWS in the introduction, transplantation, augmentation, and re-establishment of both native and naturalized species to include, but not be limited to, pronghorn, desert bighorn sheep, wild turkey, beaver, chukar, Colorado River cutthroat trout, and endangered Colorado River fish species. Priority would be given to species that provide for traditional uses and ceremonies. Introduction, transplantation, or re-establishment programs would require prior genetic and disease monitoring.</p>
<p>BLM-Administered Lands Per 2008 Monticello RMP Habitat Improvements and Protection</p> <ul style="list-style-type: none"> In areas lacking proper water distribution or natural water sources, allow for installation of precipitation catchments (guzzlers) or the development of springs on rangelands. 	<p>See previous management for installation of guzzlers/catchments.</p> <p>Agencies would collaborate with the BEC in determining fence locations and establishing and/or updating fence standards as necessary to allow wildlife movement within movement corridors. Traditional Indigenous Knowledge would be used in conjunction with agency data and standards to inform this process.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Agencies would coordinate with the BEC and Tribal Nations to determine fence locations and establish fence standards to allow wildlife movement within existing or potential movement corridors. Traditional Indigenous Knowledge would be used in conjunction with agency data and standards to inform this process.</p> <p>Discretionary actions carried out in wildlife protection areas would be subject to special conditions regulating use, especially during certain seasons. Agencies would coordinate with the BEC and Tribal Nations to incorporate</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> Adhere to BLM fence standards to allow wildlife movement when fences are being developed or maintained. Wildlife habitat objectives would be considered in all reclamation activity. Priority would be given to meeting <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997). Adhere to the recommendations in the BLM's <i>Habitat Management Guides for the American Pronghorn Antelope</i> (1980, as revised), wherever practicable. Ground-disturbing and permitted activities carried out in all seasonal wildlife protection areas would be subject to special conditions regulating use during certain seasons. These seasonal conditions would not impact maintenance and operation activities for mineral production or hunting during a recognized hunting season established by UDWR. Ground-disturbing actions in crucial habitats would be avoided where practical. Where unavoidable disturbances are required, the BLM would follow BLM Washington Office Guidance (IM 2005-069) on application of compensatory measures. <p>NFS Lands Per 1986 Manti-La Sal LRMP Big Game Habitat General Big Game Winter Range (GWR)</p> <ul style="list-style-type: none"> Provide big game habitat needed to help achieve the big game population objectives identified in interagency herd unit plans. Maintain at least 30% of shrub plants in mature age, and at least 10% in young age classes. Maintain at least two shrub species on sites capable of growing two or more shrub species. Maintain habitat capability at a level at least 50% of potential for big game. Activities or uses which induce human activity within the area may be modified, rescheduled, or denied if the combination of accumulated impacts on vegetation, behavior, and/or mitigation reduce effective habitat use below 80% of base year 1980 capacity of this unit. <p>General Big Game Winter Range (GWR)</p> <ul style="list-style-type: none"> As appropriate, permit special uses if they do not conflict with big game wintering. <p>Production of Forage (RNG)</p> <ul style="list-style-type: none"> Balance wildlife use with grazing capacities and habitat. Acquire key big game winter range or wildlife habitat easements within or adjacent to NFS lands. 	<p>Discretionary actions carried out in wildlife habitat would be subject to special conditions regulating use during certain seasons. Agencies would collaborate with the BEC to incorporate Traditional Indigenous Knowledge to develop these seasonal restrictions.</p>			<p>Traditional Indigenous Knowledge to develop any closures or seasonal restrictions.</p>
<p>Per 2008 Monticello RMP Seasonal Wildlife Protection Areas</p> <p>In addition to any other special conditions that may be in effect, crucial big game habitats are subject to special conditions regulating use during certain seasons. These seasonal conditions would not impact maintenance and operations activities for mineral production or hunting during a recognized hunting season established by UDWR.</p> <p>Special conditions for the seasonal wildlife protection areas include the following for all land-use authorizations, with the exception of private woodland harvest:</p> <ul style="list-style-type: none"> No use of low-flying aircraft. 	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.11.2).</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> • Closed to the following uses, among others, (refer to Appendix B of the 2008 Monticello RMP) during the established season: <ul style="list-style-type: none"> ○ Permitted or commercial OHV use may be limited in number of participants and duration depending on the event. ○ No use of pyrotechnics, shooting, etc. during permitted filming because of noise impacts. 				
<p>Per 2008 Monticello RMP Bighorn Sheep Lambing and Rutting Areas FWL-30</p> <p>Adhere to special conditions (FWL-29 and Appendix B of the 2008 Monticello RMP) on 317,487 acres (Appendix A, Figure 2-11, Alternative A, wildlife range) from April 1 to June 15 for lambing, and from October 15 to December 15 for rutting.</p>	<p>Bighorn Sheep Lambing and Rutting Areas</p> <p>Adhere to special conditions from April 1 to June 15 for lambing and October 15 to December 15 for rutting on 387,631 acres. The seasonal wildlife protection areas include the following for all land-use authorizations, with the exception of private wood product harvest:</p> <ul style="list-style-type: none"> • No use of low-flying aircraft. • Closed to the following uses, among others (refer to Appendix F: Stipulations Applicable to Surface-Disturbing Activities) during the established season: <ul style="list-style-type: none"> ○ Permitted or commercial OHV use may be limited in number of participants and duration, depending on the event. ○ No use of pyrotechnics, shooting, etc. during permitted filming because of noise impacts. <p>See Appendix A, Figure 2-12, Alternatives B–E, bighorn sheep habitat. See Appendix G: Best Management Practices.</p>	Same as Alternative B.	Same as Alternative B.	<p>Bighorn Sheep Lambing and Rutting Areas</p> <p>Adhere to special conditions in Alternative B, then develop special conditions with the BEC and Tribal Nations from April 1 to June 15 for lambing, and from October 15 to December 15 for rutting, or when lambing and rutting are observed on 387,631 acres.</p>
<p>Per 2008 Monticello RMP Deer Winter Range</p> <p>Adhere to special conditions (FWL-29 and Appendix B of the 2008 Monticello RMP) on 210,402 acres (Appendix A, Figure 2-11, Alternative A, wildlife range) from November 15 to April 15.</p>	<p>Same as Alternative A, with the exception that it would apply to 642,917 acres.</p> <p>Special conditions for the seasonal wildlife protection areas include the following for all land-use authorizations, with the exception of private wood product harvest:</p> <ul style="list-style-type: none"> • No use of low-flying aircraft. • Closed to the following uses, among others, during the established season: <ul style="list-style-type: none"> ○ Permitted or commercial OHV use may be limited in number of participants and duration, depending on the event. ○ No use of pyrotechnics, shooting, etc. during permitted filming because of noise impacts. <p>See Appendix A, Figure 2-13, Alternatives B–E, mule deer winter range. See Appendix G: Best Management Practices.</p>	Same as Alternative B.	Same as Alternative B.	<p>Deer Winter Range</p> <p>Adhere to special conditions as developed in collaboration with the BEC and Tribal Nations on 642,917 acres from November 15 to April 15 or where deer wintering behavior is observed.</p>
<p>Per 2008 Monticello RMP Elk Winter Range</p> <p>Adhere to special conditions (see also FWL-29 and Appendix B of the 2008 Monticello RMP) on 51,160 acres (Appendix A, Figure 2-11, Alternative A, wildlife range) from November 15 to April 15.</p>	<p>Same as Alternative A, except that it would apply to 375,586 acres.</p> <p>Special conditions for the seasonal wildlife protection areas include the following for all land-use authorizations, with the exception of private wood product harvest:</p> <ul style="list-style-type: none"> • No use of low-flying aircraft. • Closed to the following uses, among others, during the established season: <ul style="list-style-type: none"> ○ Permitted or commercial OHV use may be limited in number of participants and duration, depending on the event. ○ No use of pyrotechnics, shooting, etc. during permitted filming because of noise impacts. <p>See Appendix A, Figure 2-14, Alternatives B–E, Rocky Mountain elk winter range. See Appendix G: Best Management Practices.</p>	Same as Alternative B.	Same as Alternative B.	<p>Elk Winter Range FWL-34</p> <p>Adhere to special conditions as developed in collaboration with the BEC and Tribal Nations on 375,586 acres (Appendix A, Figure 2-14, Alternatives B–E, Rocky Mountain elk winter range) from November 15 to April 15 or when elk wintering behavior is observed.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
No similar management.	Trail cameras would be allowed in BENM following existing laws, regulations, and policy, including state law. Seasonal or geographic closures would be coordinated with the BEC.	Same as Alternative B, with the exception that trail cameras would be allowed in BENM through permit only and when consistent with maintaining the privacy of traditional ceremonial uses. Use of trail cameras would be coordinated with the BEC.	Trail cameras would be prohibited in BENM.	Trail cameras would be allowed in BENM through permit only and when consistent with maintaining the privacy of traditional ceremonial uses. Use of trail cameras would be coordinated through the BEC. Trail cameras should not be used for, or data shared for, the purpose of trophy hunting.

2.4.12. Special Status Species

2.4.12.1. GOALS AND OBJECTIVES

- Manage special status species habitat to maintain and improve viable species populations, implement recovery actions, eliminate threats, and/or prevent federal listing.
- Ensure management actions support the protection of special status species and their habitats, including culturally identified species and their habitats, to maintain and improve viable species populations, connectivity and movement needs, prey species, and forage.
- Avoid adverse impacts to special status species habitat, connectivity, movement, and prey species or forage. Where adverse effects cannot be avoided, ensure no net loss of special status species habitat, prey species, forage, connectivity, and movement.
- Collaborate with the BEC to identify special status species of cultural priority to each Tribe of the BEC; develop a plan for protecting these species using Traditional Ecological Knowledge and Tribal expertise.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.12.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Manage habitat for species conservation to incorporate Tribal and Utah statewide conservation strategies, in coordination with UDWR and the USFWS. Consider national or global conservation strategies in habitat management.
- Collaborate with the BEC to maintain, protect, and enhance habitats (including but not limited to designated critical habitat) of federally listed threatened, endangered, or candidate plant or animal species to actively promote recovery to the point that they no longer need protection or prevent the listing of species under the ESA.
- Collaborate with the BEC to maintain, protect, and enhance habitats of the BLM state director's sensitive species list, USDA Forest Service sensitive species list, species of conservation concern, USFWS Birds of Conservation Concern list, and species of cultural importance to culturally affiliated Tribal Nations (as determined through collaboration with the BEC) to ensure that actions requiring authorization or approval by the agencies are consistent with the conservation needs of these species and do not contribute to the need to list any of these species under provisions of the ESA.
- Preserve, restore, and protect habitat connectivity and unrestricted special status species movement between ecological zones, seasonal use areas, and other areas important for sustainable populations. Allow construction of aquatic organism barriers if the benefit of nonnative species control and special status species protection is greater than the loss in connectivity.
- Preserve, restore, and protect native habitat through vegetation management or other actions to support sustainable populations of special status species. Habitat treatments would be coordinated with the BEC and agency resource programs to ensure consistency with protecting BENM objects.
- Traditional use gathering of special status species plants would be managed through permit—for example, notification of use through a point of contact system, in collaboration with the BEC.
- Agencies would collaborate with the BEC and other research partners to monitor prey base for raptors.
- The effects of seasonality would be considered for limits on management and discretionary actions that might impact special status species and their habitats and for management actions and treatments to protect these species and habitats.

2.4.12.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-11. Alternatives for Special Status Species

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs Raptor management would be guided by the practices in Appendix E of the 2020 ROD/MMPs, utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses.	Agencies would collaborate with the BEC when developing seasonal restrictions and spatial buffers for raptor nesting and foraging habitats. At a minimum, the restrictions and spatial buffers would comply with <i>Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances</i> (Romin and Muck 2002) and /or ESA species recovery plans.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B, with the inclusion of restrictions, and spatial buffers would also comply with Tribal standards, as applicable with federal law, for raptor nesting and habitat protection.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 1986 Manti-La Sal LRMP</p> <p>Prohibit forest vegetation manipulation within active northern goshawk nest areas (30 acres) during the active nesting period (March 1–September 30).</p> <p>In active northern goshawk nest areas, restrict USDA Forest Service management activities and human uses for which the USDA Forest Service issues permits (does not include livestock permits) during the active nesting season unless it is determined that the disturbance is not likely to result in nest abandonment.</p>				
<p>Per 2020 ROD/MMPs</p> <p>Agencies would post or otherwise provide educational information to reduce climbing and canyoneering impacts on active raptor nests.</p>	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Agencies, in collaboration with the BEC, would post or otherwise provide educational information to reduce climbing and canyoneering impacts on active raptor nests.
<p>Per 2020 ROD/MMPs</p> <p>Raptor management would be guided by the use of raptor BMPs (Appendix E of 2020 ROD/MMPs), utilizing seasonal and spatial buffers and mitigation to maintain and enhance raptor nesting and foraging habitat while allowing other resource uses.</p> <p>Per 1986 Manti-La Sal LRMP</p> <p>Avoid activities that could cause abandonment of active golden eagle nests.</p>	Collaborate with the BEC and Tribal Nations when closing active raptor nesting areas to visitation as necessary to provide nesting success. This would include, if necessary, the temporary closure of OHV route access to nesting areas, as well as the closure of trails and climbing routes where active nests are located.	Same as Alternative B.	Same as Alternative B.	Ropes and other climbing aids are not allowed for access to nesting raptors. Coordinate with Tribal Nations and the BEC to close active raptor nesting areas to visitation as necessary to provide for nesting success. This would include, if necessary, the temporary or permanent closure of any OHV route access to nesting areas, as well as the temporary or permanent closure of trails and climbing routes where active nests are located or nesting behavior is observed. Temporary and/or permanent closures would be considered during implementation-level planning.
<p>Per 2020 ROD/MMPs</p> <p>Protect bat roosting, hibernating, and breeding habitat from disturbance. AMLs would be monitored/surveyed prior to reclamation in accordance with UDWR and the Utah Division of Oil, Gas and Mining Abandoned Mine Reclamation Program Memorandum of Understanding: Conservation and Management of Bats in Abandoned Mines in Utah (UDWR 2015). If bats are present, bat gates would be installed unless human safety is at risk.</p>	Agencies would collaborate with the BEC when determining to seasonally restrict activities that impact bat roosting, hibernating, and breeding habitat.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B with the exception of the following: <ul style="list-style-type: none"> Seasonal restrictions could include closing cave and cavern access to prevent disturbance and disease transmission.
No similar action.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Agencies would collaborate with the BEC when determining requirements for bat-friendly designs for all new construction (e.g., no obstacles across the top of water sources).
<p>Per 2020 ROD/MMPs</p> <p>Prohibit commercial overnight use in designated Mexican spotted owl (MSO) nesting areas (i.e., Protected Activity Centers [PACs]) from March 1 to August 31.</p>	<p>Education and interpretation would be used to inform visitors of appropriate behaviors to minimize impacts to nesting MSO. Casual overnight users would be encouraged to not use PAC areas. Commercial guides would not be allowed to use PAC areas for overnight use from March 1 to August 31.</p> <p>There would be no designated campsites in PACs.</p> <p>If adverse impacts are occurring to MSO occupied habitat (more than 50 people a day in the area of impact, visitors camping in sensitive areas):</p> <ul style="list-style-type: none"> Group size limits may be implemented. Camping may be limited to designated sites. Permits may be required to access affected areas. 	Same as Alternative B.	Same as Alternative B, with the exception that overnight use in the MSO PAC would be prohibited from March 1 to August 31.	<p>Row 217- Same as Alternative B with the following exceptions:</p> <ul style="list-style-type: none"> No recreational use, including overnight use, would be allowed in MSO PAC areas from March 1 to August 31 or when nesting behavior is observed. There would be no camping in MSO PAC areas. Wood harvesting would be prohibited in MSO PAC areas and within 100 feet of designated MSO habitat. If adverse impacts are occurring to MSO occupied habitat, the following would be determined in collaboration with the BEC: <ul style="list-style-type: none"> Group size limits may be implemented. Camping may be closed, if needed. Permits may be required to access affected areas.
<p>Per 2020 ROD/MMPs</p> <p>In suitable northern goshawk nesting habitat, complete territory occupancy surveys prior to management actions. When an active nest area is identified, identify the active nest area (generally 30 acres), two alternative nest areas, and three replacement nest areas where USDA Forest Service vegetation management is designed to maintain or improve desired nest area habitat.</p> <p>Determine the level of northern goshawk field survey needed. Complete surveys for territory occupancy within</p>	Same as Alternative A.	Same as Alternative A.	No discretionary activities would be allowed in occupied goshawk habitat unless the action's principal purpose is to protect BENM objects.	No discretionary activities would be allowed in occupied goshawk habitat, connectivity, and migration paths unless the action's principal purpose is to protect BENM objects according to the Traditional Indigenous Knowledge of BEC Tribes.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>suitable habitat. Surveys would be completed during the nesting and/or post-fledging period and must be conducted at least 1 year prior to implementation of management actions.</p> <p>When an active nest area has been identified, identify two alternate nest areas and three replacement nest areas.</p> <p>Per 1986 Manti-La Sal LRMP</p> <p>Forest vegetative manipulation within active, alternate, and replacement northern goshawk nest areas should be designed to maintain or improve desired nest area habitat.</p>				
<p>Per 1986 Manti-La Sal LRMP and 2020 ROD/MMPs</p> <p>When non-vegetative management activities are proposed that would result in loss of suitable goshawk habitat, sufficient mitigation measures would be employed to ensure an offset of the loss.</p>	<p>Ensure discretionary activities achieve no net loss of suitable goshawk habitat.</p>	<p>In developed recreation areas, including remote campsites, management would be the same as Alternative B. Discretionary actions would not be allowed where it would result in the loss of suitable goshawk habitat.</p>	<p>Same as Alternative E.</p>	<p>Discretionary actions would not be allowed where it would result in the loss of suitable goshawk habitat, prey base, and/or migration corridors.</p>
<p>Per 2020 ROD/MMPs</p> <p>Maintain, restore, and/or improve critical habitat requirements for T&E fish, including restoration and enhancement of backwater, side channel, and floodplain habitats. Manage habitat to minimize disturbance except when conducting riparian and aquatic habitat projects.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Maintain, restore, and/or improve special status aquatic species habitat and connectivity, including restoration and enhancement of backwater, side channel, and floodplain habitats. Manage habitat to ensure no net loss of habitat, except for short-term impacts during riparian and aquatic habitat projects that would procure a long-term benefit.</p>
<p>Per 2008 Monticello RMP</p> <p>T&E species conservation measures would be used for all surface-disturbing activities to comply with the ESA and BLM Manual 6840. Appendices B, E, I, and M of the 2008 Monticello RMP apply. The species include California condor, MSO, southwestern willow flycatcher, yellow-billed cuckoo, bonytail, Colorado pikeminnow, humpback chub, razorback sucker, and Navajo sedge.</p> <p>In the 2008 Monticello RMP:</p> <ul style="list-style-type: none"> Appendix B includes stipulations applicable to surface-disturbing activities regarding the 10 listed and candidate species. Appendix E includes USFWS correspondence. Appendix I provides wildland fire protection/management measures for special status species. Appendix M provides the finalized conservation measures and BMPs for T&E species resulting from programmatic Section 7 consultation with the USFWS (2007). 	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Agencies would collaborate with the BEC and USFWS in applying special species conservation measures for all activities to comply with the ESA, and BLM Manual 6840, <i>Special Status Species Management</i>.</p>
<p>Per 2008 Monticello RMP</p> <p>Inventories and monitoring studies would be conducted in order to determine special status plant and animal species locations, potential habitat, population dynamics, and existing and potential threats.</p>	<p>Agencies would collaborate with the BEC when developing pre-activity monitoring requirements for special status plant and animal species and important plant and animal species for traditional uses and ceremonies. Projects with the potential to impact these species would be designed to avoid impacts to these species and/or to achieve a no net loss of the species and their habitats, habitat connectivity, forage, and prey species.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Agencies would collaborate with the BEC in the development of pre-activity monitoring requirements for special status plant and animal species and endemic plants and animal species for traditional and ceremonial use. Projects with the potential to impact these species would be designed to avoid impacts to these species and/or achieve a no net loss of the species, their habitats, and habitat connectivity, forage, and/or prey species.</p>
<p>Per 2008 Monticello RMP</p> <p>The protection of species and potential and/or occupied habitat for special status species would be considered and implemented prior to any authorization or action by the BLM that could alter or disturb such habitat.</p> <p>Per 1986 Manti-La Sal LRMP</p> <p>Manage habitat for recovery of endangered and threatened species.</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.12.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.12.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.12.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.12.2).</p>
<p>Per 2008 Monticello RMP</p> <p>No management action would be permitted on BLM-administered lands that would jeopardize the continued</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>No management action would be permitted that would jeopardize the continued existence of species that are listed, proposed for listing, or candidates for listing under the ESA.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
existence of species that are listed, proposed for listing, or candidates for listing under the ESA.				
Per 2008 Monticello RMP The BLM would follow and implement the guidelines and management recommendations presented in species recovery or conservation plans (as updated), or alternative management strategies developed in consultation with the USFWS. Per 1986 Manti-La Sal LRMP Implement activities to meet the USDA Forest Service's share of approved recovery plans.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP The BLM would support and implement where possible current and future sensitive species conservation agreements, including the Colorado River Cutthroat Trout Conservation Agreement and Strategy and Conservation Agreement for the roundtail chub, bluehead sucker, and flannelmouth sucker.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	The agencies included in sensitive species' conservation agreement and in collaboration with the BEC, would implement the agreement's provisions. This includes the Colorado River Cutthroat Trout Conservation Agreement and Strategy and Conservation Agreement for the roundtail chub, bluehead sucker, and flannelmouth sucker.
Per 2008 Monticello RMP The BLM would continue to work with the USFWS and others to ensure that plans and agreements are updated to reflect the latest scientific data.	See Management Actions Common to All Alternatives.	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).
Per 2008 Monticello RMP The BLM would work cooperatively with the USFWS and UDWR to obtain and/or maintain maps of current occupied and potential habitats for special status species.	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).
Per 2008 Monticello RMP The BLM would work with UDWR to implement the <i>Utah Wildlife Action Plan</i> (UDWR 2005) to coordinate management decisions that would conserve native species and prevent the need for additional listings.	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).	See Management Common to All Action Alternatives (Section 2.4.12.2).
Per 2008 Monticello RMP Translocations of population augmentation of special status species would be allowed to aid in conservation and recovery efforts. Necessary habitat manipulations and monitoring would be implemented to ensure successful translocation efforts.	Special status species native to BENM would be allowed to be translocated to aid in conservation and recovery efforts. Necessary habitat manipulations and monitoring would be implemented to ensure successful translocation efforts.	Same as Alternative B.	Same as Alternative B.	Special status species native to BENM would be allowed to be translocated to aid in conservation and recovery efforts only when culturally appropriate and if appropriate genetic and disease monitoring has been conducted prior to translocation. Necessary habitat manipulations and monitoring would be implemented to ensure successful translocation efforts.
Per 2008 Monticello RMP Retain potential/occupied special status species habitat in federal ownership. Acquisition of potential/occupied special status species habitat would be a high priority. These acquired/exchanged lands would be managed according to BLM land management prescriptions for special status species.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2008 Monticello RMP Gunnison Prairie Dogs Site-specific analysis would be conducted to determine presence or absence of prairie dog colonies within potential/occupied habitat (Map 14 in Appendix A of 2008 Monticello RMP). Colonies would be protected from surface-disturbing activities with the use of BMPs. Site-specific analysis would mitigate impacts from other BLM-authorized activities.	Site-specific inventory would be conducted to determine presence or absence of prairie dog colonies within potential/occupied habitat. Projects with the potential to impact colonies would be designed to avoid impacts and/or achieve a no net loss of the species and their habitats.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B, with exception of the following: • Projects with the potential to impact colonies would be designed to avoid impacts and/or achieve a no net loss of the species, their habitats, habitat connectivity, forage, and predators that rely on prairie dogs.
Per 2008 Monticello RMP Habitat for MSO and flannelmouth sucker (Arch Canyon) In Arch Canyon, OHV use is limited to the designated route up to the NFS lands boundary, a total of 8 miles one way.	See Arch Canyon RMZ management in the Recreation and Visitor Services section for MSO management.	See Arch Canyon RMZ management in the Recreation and Visitor Services section for MSO management.	See Arch Canyon RMZ management in the Recreation and Visitor Services section for MSO management.	See Arch Canyon RMZ management in the Recreation and Visitor Services section for MSO management.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Organized and commercial groups would be required to obtain an SRUP. This permit would allow access on the designated route up to the NFS lands boundary except from March 1 through August 31. During this period, access would be limited to 7.5 miles of the designated route. Therefore, during this period motorized access would not be allowed within 0.5 mile of the NFS lands boundary.				

2.4.13. Visual Resource Management, Night Skies, and Soundscapes

2.4.13.1. GOALS AND OBJECTIVES

- Manage federal lands to protect the quality of scenic (visual) values in BENM in collaboration with the BEC.
- Manage federal lands to protect the quality of night skies and natural soundscapes in BENM in collaboration with the BEC.
- Manage federal lands according to the assigned VRM class objectives and Scenic Integrity Objectives (SIO)
 - BLM
 - VRM Class I objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention (wilderness, WSAs, wild sections of WSRs, and other congressionally and administratively designated areas where decisions have been made to preserve a natural landscape are assigned VRM Class I).
 - VRM Class II objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
 - VRM Class III objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.
 - VRM Class IV objective: To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.
 - USDA Forest Service
 - Very High: The valued landscape character is intact with only subtle, if any, deviations. Generally provides for ecological change only.
 - High: Landscapes where the valued landscape character appears intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely, and at such scale, that they are not evident.
 - Moderate: Refers to landscapes where the described landscape character appears slightly intact. Noticeable deviations must remain visually subordinate to the landscape character being viewed.
 - Low: Activities must remain visually subordinate to the attributes of the described landscape character. Activities may repeat form, line, color, or texture common to the landscape character, but changes in quality of size, number, intensity, direction, pattern, and so on, must remain visually subordinate to the described landscape character.
 - Very Low: Activities of vegetation and landform alterations may dominate the described landscape character but should appear as valued occurrences when viewed at background distances.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.13.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Manage BENM to maintain and enhance ecologically sound, resilient, and visually appealing natural and cultural landscapes that sustain scenic and sonic character in ways that contribute to visitors' sense of place and connection with nature.
- Collaborate with the BEC in the management of visual resources, soundscapes, and dark night skies according to Traditional Indigenous Knowledge as provided by the BEC and Tribal Nations, where appropriate.
- Manage BLM-administered lands using the VRM system according to VRM class objectives to meet or exceed scenic integrity or VRM objectives and manage scenic resources on NFS lands using the Scenery Management System (SMS) to meet or exceed SIOs.
- For NFS lands, scenery would be managed to preserve the natural and cultural attributes of BENM's scenery, as described in the SIOs below.
- To the extent practicable, restore existing visual contrasts remaining from past land uses into VRM and SIO class conformance.
- Agencies would collaborate with the BEC to inventory and monitor night skies and soundscapes within BENM to identify general trends and specific effects from BLM and USDA Forest Service-managed uses within BENM.
- Agencies would collaborate with the BEC when developing a night skies management plan and soundscapes management plan to mitigate effects from BENM uses, including education about night skies (e.g., celestial observations), unimpeded natural views, soundscapes, culturally important viewsheds, and their importance to BENM and Tribal Nations.
- Reclaim landscapes, restore native vegetation, and rehabilitate waterways and riparian areas to enhance natural and historical scenic values that have been significantly degraded.

2.4.13.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-12. Alternatives for Visual Resource Management, Night Skies, and Soundscapes

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2008 Monticello RMP VRM-1</p> <p>411,245 acres are managed as VRM Class I (Appendix A, Figure 2-15, Alternative A, Visual Resource Management classes and scenic integrity objectives). These areas include the following:</p> <p>WSAs:</p> <ul style="list-style-type: none"> • 13 WSAs (389,440 acres): Mancos Mesa (51,440 acres), Grand Gulch Instant Study Area (ISA) Complex (37,810), Road Canyon (52,420), Fish Creek Canyon (46,440), Mule Canyon (5,990), Cheese Box Canyon (15,410), Dark Canyon ISA Complex (62,040), Butler Wash (22,030), Bridger Jack Mesa (5,290), Indian Creek (6,870), South Needles (160), and the Butler Wash Lands Administratively Endorsed Area. <p>ACECs:</p> <ul style="list-style-type: none"> • Valley of the Gods • Indian Creek • San Juan River <p>WSRs:</p> <ul style="list-style-type: none"> • Dark Canyon Suitable River Segment • Colorado River Suitable Segment 3 • San Juan River Suitable Section 3 • San Juan River Suitable Segment 5 	<p>VRM Class I for BLM-administered lands and SIO Very High for NFS lands</p> <p>410,236 acres of BLM-administered lands are managed as VRM Class I (Appendix A, Figure 2-16, Alternative B, Visual Resource Management classes and scenic integrity objectives). These areas include the following:</p> <ul style="list-style-type: none"> • WSAs • Indian Creek ACEC • Valley of the Gods ACEC (excluding highway access portals [57 acres]) • Dark Canyon WSR suitable river segment • San Juan WSR Suitable Segment 5 • Colorado River WSR Suitable Segment 2 • Colorado River WSR Suitable Segment 3 <p>46,858 acres of NFS lands are managed with an SIO of Very High. These areas include the following:</p> <ul style="list-style-type: none"> • Designated wilderness • USDA Forest Service recommended wilderness 	<p>VRM Class I for BLM-administered lands and SIO Very High for NFS lands</p> <p>507,746 acres are managed as VRM Class I (Appendix A, Figure 2-17, Alternative C, Visual Resource Management classes and scenic integrity objectives). These areas include:</p> <ul style="list-style-type: none"> • Same as Alternative B with the exception that the following would also be managed as VRM Class I: <ul style="list-style-type: none"> ○ LWC managed for those characteristics. 	<p>VRM Class I for BLM-administered lands and SIO Very High for NFS lands</p> <p>802,045 acres are managed as VRM Class I (Appendix A, Figure 2-17, Alternative C, Visual Resource Management classes and scenic integrity objectives). These areas include:</p> <ul style="list-style-type: none"> • Same as Alternative B with the exception that the following would also be managed as VRM Class I: <ul style="list-style-type: none"> ○ LWC managed for those characteristics. 	<p>1,336,694 acres are managed as VRM Class I and SIO Very High (Appendix A, Figure 2-19, Alternative E, Visual Resource Management classes and scenic integrity objectives). These areas include:</p> <ul style="list-style-type: none"> • Remote Zone • Outback Zone
<p>Per 2008 Monticello RMP VRM-2</p> <p>304,949 acres are managed as VRM Class II, including but not limited to the following (Appendix A, Figure 2-15, Alternative A, Visual Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • ACECs: <ul style="list-style-type: none"> ○ Lavender Mesa ○ Shay Canyon ○ San Juan River (portions) • WSRs: <ul style="list-style-type: none"> ○ Colorado River Suitable Segment 2 • Other Areas: <ul style="list-style-type: none"> ○ Mesa tops for Tables of the Sun ○ Comb Ridge Management Zone of Cedar Mesa SRMA ○ Indian Creek SRMA from Indian Creek ACEC south to NFS lands boundary and Davis and Lavender Canyons ○ Harmony Flat ○ White Canyon area ○ Dripping Canyon/Chicken Corners area ○ Non-WSA areas with wilderness characteristics (Dark Canyon, Mancos Mesa, Grand Gulch) ○ Lockhart Basin 	<p>VRM Class II for BLM-administered lands and SIO High for NFS lands</p> <p>646,619 acres of BLM-administered lands are managed as VRM Class II, including the following (Appendix A, Figure 2-16, Alternative B, Visual Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • LWC managed for those characteristics • Valley of the Gods ACEC highway access portals (57 acres) • All BLM-administered lands within BENM not specifically managed as VRM Class I or VRM Class III would be managed as VRM Class II. • All NFS lands within BENM not managed as SIO Very High or SIO Moderate would be managed as SIO High. 	<p>VRM Class II for BLM-administered lands and SIO High for NFS lands</p> <p>549,685 acres are managed as VRM Class II, including the following (Appendix A, Figure 2-17, Alternative C, Visual Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • Same as Alternative B, with the following exception: <ul style="list-style-type: none"> ○ LWC managed for those characteristics would be managed as VRM Class I. 	<p>VRM Class II for BLM-administered lands and SIO High for NFS lands</p> <p>272,526 acres are managed as VRM Class II, including the following (Appendix A, Figure 2-17, Alternative C, Visual Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • Same as Alternative B, with the following exception: <ul style="list-style-type: none"> ○ LWC managed for those characteristics would be managed as VRM Class I. 	<p>VRM Class II for BLM-administered lands and SIO High for NFS lands.</p> <p>26,320 acres are managed as VRM Class II and SIO High, including the following (Appendix A, Figure 2-19, Alternative E, Visual Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • Front Country Zone • Passage Zone
<p>Per 2008 Monticello RMP VRM-3</p> <p>212,623 acres are managed as VRM Class III, including but not limited to the following (Appendix A, Figure 2-15,</p>	<p>VRM Class III for BLM-administered lands and SIO Moderate for NFS lands</p> <p>18,144 acres of BLM-administered lands are managed as VRM Class III, including the following (Appendix A, Figure</p>	<p>VRM Class III for BLM-administered lands and SIO Moderate for NFS lands</p> <p>Same as Alternative B.</p>	<p>VRM Class III for BLM-administered lands and SIO Moderate for NFS lands</p> <p>534 acres are managed as VRM Class-III, including the following (Appendix A, Figure 2-18, Alternative D, Visual</p>	<p>No BLM-administered lands on BENM would be managed as VRM Class III, with exceptions for temporary research projects that would terminate within 2 years of initiation. Rehabilitation would begin at the end of the 2-year period. During the temporary project, the Manager may require</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Alternative A, Visual Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • ACECs: <ul style="list-style-type: none"> ○ San Juan River Sections 2 and 4 • Other Areas: <ul style="list-style-type: none"> ○ Cedar Mesa SRMA (portions) ○ Moqui Canyon ○ North Cottonwood area ○ North of SR-95 in the South Cottonwood area ○ Grand Flat area ○ Beef Basin (portions) ○ Gravel, Long, and Short Canyon areas ○ Other areas illustrated on Map 1 in Appendix A of the 2008 Monticello RMP 	<p>2-16, Alternative B, Visual Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • Existing communication sites (500-foot buffer). • Lands within 0.25 mile of U.S. 191. • Acquired lands with existing infrastructure if that infrastructure is inconsistent with VRM Class-I or Class II. • Existing ROW corridors. • ROW open areas. • Indian Creek Corridor Recreation Management Zone (RMZ), Trail of the Ancients RMZ, Bicentennial Highway RMZ (portion [3,723 acres]), Sand Island RMZ, Goosenecks RMZ (portion [61 acres]). • Bluff airport. • All NFS lands within BENM not managed as SIO Very High or SIO High would be managed as SIO Moderate. 		<p>Resource Management classes and scenic integrity objectives):</p> <ul style="list-style-type: none"> • Existing communication sites (500-foot buffer). • Existing ROW corridors. • Bluff airport. • All NFS lands within BENM not managed as SIO Very High or SIO High would be managed as SIO Moderate. 	<p>phased mitigation to better conform with prescribed VRM objectives. Any new Monument buildings and infrastructure must be designed in accordance with VRM Class I and II objectives.</p> <p>The USDA Forest Service would manage all NFS lands to Very High and High SIO and co-define requirements of Very High and High SIO when possible.</p>
<p>Per 2008 Monticello RMP VRM-4 143,845 acres would be managed as VRM Class IV, as illustrated in Appendix A, Figure 2-15, Alternative A, Visual Resource Management classes and scenic integrity objectives.</p>	<p>VRM Class IV Same as Alternative E.</p>	<p>VRM Class IV Same as Alternative E.</p>	<p>VRM Class IV Same as Alternative E.</p>	<p>VRM Class IV No BLM-administered lands in BENM would be managed as VRM Class IV and no NFS lands within BENM would be managed as SIO Low or Very Low.</p>
<p>Per 1986 Manti-La Sal LRMP USDA Forest Service resource uses or activities should meet the adopted Visual Quality Objectives (VQOs) (as displayed in Appendix F of the 1986 Manti-La Sal LRMP).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>
<p>Per 1986 Manti-La Sal LRMP Rehabilitate existing projects and areas which do not meet the adopted VQO(s) specified for each management unit. Set priorities for rehabilitation considering the following:</p> <ul style="list-style-type: none"> • Relative importance of the site and amount of deviation from adopted VQO. Foreground areas have highest priority • Length of time it would take natural processes to reduce the visual impacts so that they meet the adopted VQO; • Length of time it would take rehabilitation measures to meet the adopted VQO • Benefits to other resource management objectives gained through rehabilitation 	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>
<p>Per 1986 Manti-La Sal LRMP Achieve landscape enhancement through addition, deletion, or alteration of landscape elements. Examples of these include:</p> <ul style="list-style-type: none"> • The addition of vegetation species to introduce unique form, color, texture of existing vegetation or • vegetation manipulation to open up vistas or screen out undesirable views. 	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>
<p>Per 1986 Manti-La Sal LRMP Developed Recreation Sites (DSR) and Undeveloped Motorized Recreational Use (UDM) On-site VQO is partial retention or modification.</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>
<p>Per 1986 Manti-La Sal LRMP Meet USDA Forest Service-directed VQOs except where habitat improvement activities occur. Treated sites must be returned to the planned VQO within 10 years.</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.13.2).</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 1986 Manti-La Sal LRMP Watershed Protection/ Improvement (WPE) Short-term VQO is rehabilitation; in the long term, it should meet the adopted VQO.	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).
Per 1986 Manti-La Sal LRMP Research, Protection, and Interpretation of Lands and Resources (RPI) The VQO on all units is generally preservation.	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).
Per 1986 Manti-La Sal LRMP Special Land Designation Manage generally for a partial retention VQO.	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).	See Management Actions Common to All Action Alternatives (Section 2.4.13.2).
Per 2020 ROD/MMPs The following management would be implemented to minimize impacts to night skies: <ul style="list-style-type: none"> Limit the use of artificial lighting during nighttime operations to only those determined necessary for the safety of operations and personnel. Utilize shielding and aiming techniques and limit the height of light poles to reduce glare and avoid light shining above horizon(s). Use lights only where needed, use light only when needed, and direct all lighting on-site. No permanent lighting would be allowed in VRM Class I areas. Use motion sensors, timers, or manual switching for areas that require illumination but are seldom occupied. Any authorized facilities would use the best technology available to minimize light emissions. Reduce lamp brightness and select lights that are not broad spectrum or bluish in color. Use lamp types such as sodium lamps, which are less prone to atmospheric scattering. Require a lightscape management plan where an extensive amount of long-term lighting is proposed. 	The following management would be implemented to manage for the benefit of night skies: All lighting directed on-site only. Only allow artificial lighting when necessary for safety No broad spectrum or bluish lights. No permanent lighting in Very High or High SIO (USDA Forest Service) and VRM Class I and VRM Class II areas (BLM). Motion-activated lighting would be utilized when feasible. Use of sodium lamps to the extent possible to reduce atmospheric scattering. Shielding and aiming of all lights required.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B with the following addition: Collaborate with the BEC to survey existing impacts to night skies, soundscapes, and visual resources and identify those that damage or degrade culturally affiliated Tribes' cultural practices requiring darkness and natural viewsapes.

BUILT ENVIRONMENT

2.4.14. Cultural Resources

2.4.14.1. GOALS AND OBJECTIVES

- Work with the BEC and Tribal Nations to identify and evaluate properties of cultural significance, TCPs, American Indian sacred sites, cultural landscapes, trails, Traditional Indigenous Knowledge about cultural landscapes, and traditionally significant vegetation and forest products (FLPMA Sections 103I, 201(a), and 201(c); NHPA Section 110 (a); Archaeological Resources Protection Act (ARPA), Section 14 (a)). Preserve and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations (FLPMA Sections 103(c), 201(a), and 202(c); NHPA Section 110(a); ARPA Section 14(a)). Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration or from other resource uses (FLPMA Section 103(c) and NHPA Sections 106 and 110(a)(2)).
- Ensure that BENM resources important for cultural and traditional needs, as well as for subsistence practices and economic support of Tribal communities, are available and sustainable.
- Ensure cultural resources, including sacred sites, plant populations and communities, and sacred landscapes are managed in accordance with applicable law, Executive Orders (EOs), policy, and other applicable directives. Management actions should preserve or enhance their ecological condition, setting for solitude, privacy, quiet, and scenic character of the cultural landscape of BENM.
- Agencies would collaborate with the BEC and Tribal Nations to identify and evaluate properties of cultural significance, such as sacred sites, cultural landscapes, and TCPs, and to develop priorities for cultural surveys and inventories.
- Manage BENM natural resources such as water, wildlife, plants, trees, and other resources to support cultural uses by culturally affiliated Tribal Nations.

- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.14.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would manage cultural resources for present and future generations in collaboration with the BEC as it relates to scientific, educational, recreational, and traditional Tribal uses of these cultural landscapes.
- Agencies would collaborate with the BEC to develop a comprehensive interpretive plan or plans for the Planning Area (see Section 2.4.15, Cross Cultural Education and Outreach). The interpretive plan(s) would follow the agencies' and the BEC's collective education vision, goals, themes, strategies, and opportunities of BENM. The plan would include a long-range implementation strategy that includes partnership development, staffing needs, and program costs.
- Agencies would collaborate with the BEC and Tribal Nations to either stabilize ancestral sites with standing architecture or allow them to complete their natural life cycles, where appropriate. Stabilization would only be considered for sites where it is necessary to protect site values, as determined through collaboration with the BEC and Tribal Nations and in consultation through the NHPA Section 106 process.
- During implementation-level planning, agencies would collaborate with the BEC to develop a database with maps for fire-sensitive cultural resources (including wildlife and plants associated with cultural practices) and make it available for fire management, fuels reduction planning, and resource protection during fire management activities within 3 years of issuance of this plan decision.
- Cultural resources that are eligible for the National Register, including archaeological sites, historic sites, cultural landscapes, districts, and TCPs that are managed according to NHPA regulations, would continue to be maintained and managed to preserve their National Register characteristics and integrity of location, design, setting, materials, workmanship, feeling, or association.
- To ensure cultural resources, including sacred sites, traditional use plant populations and communities, and sacred landscapes, are managed to protect BENM objects, agencies would collaborate with the BEC and Tribal Nations to implement management actions to preserve or enhance their condition; setting for solitude, privacy, and quiet; ecological status; and scenic character. Seasonal attributes would be incorporated in management actions, where applicable, that reflect Tribal Traditional Indigenous Knowledge around seasons, such as rest.
- To enhance cultural resource resilience to fire, wildfire protection activities and fuels management projects would implement techniques and outcomes, incorporating Traditional Indigenous Knowledge, to benefit cultural resource preservation and resiliency.
- In collaboration with the BEC and Tribal Nations, identify appropriate measures to protect cultural resources, as appropriate, from deterioration due to natural forces, visitation, or from authorized or unauthorized use.
- Agencies would proactively manage sites to protect cultural resources, to the extent possible, from effects that might be accelerated from climate change, as appropriate, such as wildfire, in collaboration with the BEC and Tribal Nations.
- Agencies would collaborate with the BEC and Tribal Nations so that Tribal perspectives and traditional knowledge become integral components of BENM management actions and decisions.
- Agencies would collaborate with the BEC to facilitate educational opportunities within Tribal communities with youth groups, elders, or other similar groups, including coordinating on the development of facilities.
- Provide Tribal Nations and affected communities that maintain cultural or religious ties to BENM use and access to sacred sites, cultural landscapes, and traditionally significant vegetation and forest products consistent with the protection of BENM objects and to the extent practicable by law.
- Agencies would collaborate with the BEC to identify sites where recreational visitation may be causing an impact and address those impacts, including educating recreational visitors about Indigenous descendant community connections to BENM cultural resources and etiquette to avoid or limit impacts to cultural resources, and, where necessary, controlling and/or limiting recreational visitation.
- Agencies would collaborate with the BEC on appropriate interpretation and education of the public about cultural resources as part of a living landscape, as objects of BENM, and their connections to descendant communities.
- Agencies would provide opportunities for volunteers to partner with the agencies and the BEC to identify, study, and monitor sites. This would include partnering with the USDA Forest Service Heritage Program, Tribal Nations, and volunteer organizations.
- Agencies would collaborate with the BEC and Tribal Nations to identify cultural resource management projects or settings that provide educational opportunities for Tribal youth.
- Agencies would collaborate with the BEC and Tribal Nations to identify cultural resources on BENM that might be recognized only by those who know traditional practices and develop management strategies to protect them, according to Traditional Indigenous Knowledge and Tribal expertise.
- Within 5 years of RMP/EIS approval, agencies would collaborate with the BEC and Tribal Nations to identify and develop management strategies to protect, restore, and maintain culturally significant resources, such as sacred sites, TCPs, plant communities and gathering areas, wood gathering locations, and springs. This may include co-stewardship of certain plant resources, pursuant to Traditional Ecological Knowledge and traditional cultural practices of the Tribal Nations of the BEC.
- Agencies would meet semiannually with Tribal Nations to collaborate, partner, and ensure that important resources or places are available for Tribal use and are protected from authorized and unauthorized uses.
- Agencies would keep all sensitive cultural information confidential and safeguarded from public release to the extent allowed by law. This includes locations of cultural resource sites, traditional beliefs, LiDAR data, and cultural and traditional activities.
- Agencies would collaborate with BEC and Tribal Nations in managing ethnographic or other sensitive cultural information. The agencies, BEC and/or Tribal Nations would coordinate the protection of this information through informal or formal agreements (e.g., data-sharing agreements).
- To ensure the BEC and Tribal Nations and their representatives can conduct ceremonial activities and gatherings in private, agencies would collaborate with the BEC in identifying temporary closures as needed.

- Tribal access to culturally valued BENM resources would be consistent with the Religious Freedom Restoration Act and other applicable laws. Collection of BENM resources would not be prohibited where such prohibition constitutes a substantial burden on religious practices.
- The agencies would work with Tribal Nations to create a comprehensive plan to assist with efficient repatriation of Indigenous human remains and cultural items under the Native American Graves Protection and Repatriation Act (NAGPRA). Consistent with federal law, this agreement should be guided by Traditional Indigenous Knowledge regarding the proper care of ancestral human remains, including ancient human remains. The agreement should reflect Tribal values. Human ancestral remains should remain in place where found and should generally not be disinterred or disturbed. This may require agencies to establish barriers preventing the public from coming into contact with ancestral remains, including paleoanthropological remains. All remains discovered in the Monument should be evaluated on a case-by-case basis in collaboration with Tribal Nations, the BEC, and the appropriate cultural advisors from each Tribe. Upon discovery of ancestral human remains in the Monument, the appropriate Tribal Nations and the BEC should be notified immediately, as per federal law.

2.4.14.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-13. Alternatives for Cultural Resources

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs</p> <p>An activity-level CRMP would be developed within 2 years of the completion of the 2020 ROD/MMPs in coordination with Tribes, the BENM Advisory Committee, the BEC, consulting parties, and other interested stakeholders. The CRMP would provide site-specific, implementation-level direction to effectively manage recreation and other uses while protecting the integrity of significant cultural resources. This plan would include the following:</p> <ul style="list-style-type: none"> • Developing methods for identifying and evaluating cultural resources in collaboration with the BEC, including TCPs, American Indian sacred sites, cultural landscapes, and traditionally significant vegetation and forest products. • A monitoring and stabilization plan for cultural resource sites allocated to Public Use (Developed or Undeveloped). In collaboration with the BEC, Tribal Nations, and consulting parties, identification of criteria for sites and areas currently receiving visitation or may receive visitation in need of restricted access, allocation to Public Use (Developed or Undeveloped), stabilization, protective measures (e.g., fences and/or surveillance equipment), education, and/or interpretation. • Coordination with the BENM Advisory Committee, the BEC, Tribal Nations, consulting parties, and recreational and volunteer groups to assist with monitoring, education, and interpretation. • Site-specific criteria for addressing SRP applications requesting visitation to cultural resource sites. 	<p>An activity-level CRMP would be developed after the completion of this RMP/EIS in collaboration with the BEC and Tribal Nations. The CRMP would provide site-specific, implementation-level direction to effectively manage uses while protecting the integrity of significant cultural resources. This plan would include the following:</p> <ul style="list-style-type: none"> • Developing methods for identifying and evaluating cultural resources in collaboration with the BEC, including culturally important or religiously significant areas, Tribal Nations' sacred sites, cultural landscapes, and traditionally significant vegetation and forest products. • A monitoring and stabilization plan for cultural resource sites allocated to Public Use (Developed or Undeveloped). In collaboration with the BEC, Tribal Nations, and consulting parties, identification of criteria for sites and areas currently receiving visitation or that may receive visitation in need of restricted access, allocation to Public Use (Developed or Undeveloped), stabilization, protective measures (e.g., fences and/or surveillance equipment), education, and/or interpretation. This plan includes inventorying existing stabilization at sites. • Collaboration with the BEC, Tribal Nations, consulting parties, and recreational and volunteer groups to assist with monitoring, education, and interpretation. • In consultation with the BEC, identify management parameters for each category of allocated sites. • Allow Tribal Nations' non-commercial traditional use of vegetation and forest and wood products for the collection of herbs, medicines, traditional use items, or items necessary for traditional, religious, or ceremonial purposes, as consistent with the Religious Freedom Restoration Act and other applicable laws. 	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>A CRMP would be developed within two years of the completion of this RMP/EIS in coordination with the BEC, Tribal Nations, and other culturally affiliated Tribal Nations. The CRMP would include site-specific, implementation-level direction to effectively manage uses while protecting the integrity of significant cultural resources. The CRMP would include the following:</p> <ul style="list-style-type: none"> • Management tools and methods that include, where appropriate, Tribal protocols for identifying and evaluating cultural resources in collaboration with the BEC and Tribal Nations, including TCPs, Tribal Nations' sacred sites, cultural landscapes, Traditional Indigenous Knowledge about cultural landscapes and traditionally significant plants, wildlife, minerals, and tree species. • A timeline for the completion of priority cultural and historic resource inventories in collaboration with the BEC and Tribal Nations. • Annual survey requirements, using Western scientific and Indigenous methodologies, developed in collaboration with BEC. • A monitoring and stabilization plan for cultural resource sites. In collaboration with the BEC, identification of criteria and risk factors for sites and areas, including but not limited to areas currently receiving visitation or that are impacted by visitation, grazing, climate change, and vegetation management. Identification of mitigation measures, including but not limited to stabilization, protective measures (e.g., fences and/or surveillance equipment), grazing limits, exclosures, avoidance, protection of the water table, education, or interpretation. • An interpretation plan, with an emphasis on education goals identified in collaboration with the BEC for sites allocated for specific uses. • Coordination with the BEC and Tribal Nations, consulting parties, and recreational and volunteer groups to assist with monitoring, education, and interpretation. • Site-specific criteria for addressing SRP applications and other permits/authorizations for visitation to cultural resource sites. • A schedule for resource rest, including cultural sites, created in collaboration with the Tribal Nations. Collaborative management meetings and activities would respect ceremonial times of the year and respect rest for BEC and Tribal representatives. • An earth-to-sky based framework, recognizing the interrelatedness of the entire cultural landscape of BENM to the Tribes of the BEC.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
				<ul style="list-style-type: none"> A collaborative strategic plan by the Tribes of the BEC, the BLM, and USDA Forest Service to jointly identify funding to conduct cultural resource inventories.
<p>Per 2020 ROD/MMPs</p> <p>Protective measures would be established and implemented for sites, structures, objects, and traditional use areas that are important to Tribes with historical and cultural connections to the land to maintain the viewsheds and intrinsic values, as well as the auditory, visual, and aesthetic settings of the resources. Protection measures for undisturbed cultural resources and their natural settings would be developed in compliance with regulatory mandates and Tribal consultation (Appendix H).</p>	<p>Protective measures would be established and implemented in collaboration with the BEC for sites, structures, objects, and traditional use areas that are important to Tribal Nations with historical and cultural connections to the land to maintain the viewsheds and intrinsic values, as well as the auditory, visual, and aesthetic settings of the resources. Protection measures for undisturbed cultural resources and their natural settings would be developed in compliance with regulatory mandates and BEC consultation (Appendix C: Tribal Nations Collaboration Framework).</p>	Same as Alternative B.	Same as Alternative B.	<p>Protective measures would be established and implemented in coordination with the BEC, the Tribal Nations, and other culturally affiliated Tribal Nations for sites, structures, objects, and traditional use areas that are important to Tribal Nations with historical and cultural connections to the land to maintain the viewsheds and intrinsic values, as well as the auditory, visual, and aesthetic settings of the resources. Protection measures for undisturbed cultural resources and their natural settings would be developed in compliance with regulatory mandates and in collaboration with the BEC. Coordinate law enforcement efforts with the BEC and Tribal Nations to protect cultural sites and historic properties.</p>
<p>Per 2020 ROD/MMPs</p> <p>The agencies would proactively reduce hazardous fuels or mitigate the potential hazard around archaeological and cultural sites that are susceptible to destruction by fire from prescribed fire or wildfire. Management response to fire would follow guidelines described Section 2.3 of each unit's MMP in the 2020 ROD/MMPs and in current implementation-level fire management planning documents.</p>	<p>The agencies, in coordination with the BEC, would proactively reduce hazardous fuels or mitigate the potential hazard around cultural sites, including archaeological sites that are susceptible to destruction from prescribed burns or wildfire. Management response to fire would follow guidelines described in Section 2.4.17 Fire Management and in current implementation-level fire management planning documents.</p>	Same as Alternative B.	Same as Alternative B.	<p>The agencies, in coordination with the BEC and Tribal Nations, would proactively reduce hazardous fuels or mitigate the potential hazard around cultural sites, including archaeological sites that are susceptible to destruction from prescribed burns. Management response to fire would follow guidelines described in Section 2.4.17 Fire Management and in current implementation-level fire management planning documents. Hazardous fuels mitigation and fire mitigation would utilize traditional Tribal methods where feasible.</p>
<p>Per 2020 ROD/MMPs</p> <p>Unauthorized use of domestic pets and pack animals would not be allowed in cultural resources (including archaeological resources) except for historic roads and trails. Where problems occur, the agencies would evaluate posting signs to notify visitors of restrictions.</p>	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	<p>Unauthorized use of domestic pets and pack animals would not be allowed in cultural resource areas (including archaeological resources) except for historic roads and trails. Where problems occur, the agencies would evaluate posting signs to notify visitors of restrictions and explore protective measures like leash requirements.</p>
<p>Per 2020 ROD/MMPs</p> <p>Camping would not be allowed within cultural resources (including archaeological resources).</p>	<p>Protective measures related to potential recreation impacts include the following:</p> <ul style="list-style-type: none"> Camping would not be allowed within archaeological resources and other cultural resources. Campfires would not be allowed in archaeological sites. An exception may be made to allow campfires in archaeological sites for culturally affiliated Tribes to accommodate Tribal Nations' traditional, medicinal, and ceremonial purposes and practices. Ropes and climbing aids (e.g., bolts, fixed anchors, webbing) would not be allowed to access archaeological resources and other cultural resources unless used for scientific purposes with a permit, for administrative (Tribal and agency) access, or for emergencies. Agencies would collaborate with the BEC in restricting unmanned aircraft system (UAS) use during times when private religious ceremonies are being conducted and during sensitive times for wildlife species. Cultural sites are considered open to visitation unless closed. They may be closed to visitation when their condition is determined to be at risk or when they contain visitor safety hazards. Agencies would work with the BEC to determine the best way to implement closures and how to manage the potential impact of closing sites. Agencies would consult with the BEC and Tribal Nations to identify seasons for closure for culturally significant areas, as appropriate, to allow for resource rest and to provide for traditional and ceremonial uses. No entry by visitors would be allowed into the interior rooms of standing structural sites, except those structures specifically identified as open to entry. Where practicable, standing structural sites would be signed to indicate this restriction. Entry would be restricted to permitted access 	<p>Same as Alternative B with the following exceptions:</p> <ul style="list-style-type: none"> Agencies would monitor sites, and if impacts from visitation are impacting site integrity, those sites could be closed either seasonally or year-round. 	<p>Same as Alternative B with the following exceptions:</p> <ul style="list-style-type: none"> No entry by visitors would be allowed into the interior rooms of standing structural sites. Where practicable, standing structural sites would be signed to indicate this restriction. Entry would be restricted to permitted access for scientific purposes, administrative access (either Tribal or agency), or emergencies. 	<p>Protective measures related to potential recreation impacts include the following:</p> <ul style="list-style-type: none"> Camping would not be allowed within archaeological resources and other cultural resources. Campfires would not be allowed in archaeological sites. An exception may be made to allow campfires in archaeological sites for culturally affiliated Tribes to accommodate Tribal Nations' traditional, medicinal, and ceremonial purposes and practices. Ropes and climbing aids (e.g., bolts, fixed anchors, webbing) would not be allowed to access archaeological resources and other cultural resources unless done for scientific purposes in accordance with an agency-issued permit or to address an emergency. Agencies would collaborate with the BEC on proposed permits for scientific purposes. UAS landings/takeoffs allowed only when specifically authorized by the agencies after collaboration with the BEC. No entry by visitors would be allowed into the interior rooms of standing structural sites, except those structures specifically identified as open to entry. Where practicable, standing structural sites would be signed to indicate this restriction. Entry would be restricted to permitted access for scientific purposes, administrative access (either Tribal or agency), or emergencies. Agencies would consult with the BEC and Tribal Nations to identify seasons for closure for culturally significant areas as appropriate to allow for resource rest and to provide for traditional and ceremonial uses.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs</p> <p>As funding is available, the agencies would conduct Class III cultural resource inventories in a manner that complies with Section 110 of the NHPA and Section 14 of ARPA. Priorities for inventory include the following (in this order):</p> <ul style="list-style-type: none"> • Group 1: Areas that receive heavy public use and/or those that lack intensive inventory in relation to current standards. • Group 2: Areas that need records clarification or updating. • Group 3: Areas with little or no previous inventory. <p>These inventory priorities may change in response to changing conditions; uses and input from researchers, educators, and Tribes; or other changed circumstances such as changes in travel management implementation guidelines. Inventory and site documentation would conform to the standards listed in BLM Manual 8100; the BLM would also allow the use of additional field recording protocols in response to research goals and designs, special management, and/or other needs as identified in the future.</p>	<p>for scientific purposes, administrative access (either Tribal or agency), or emergencies.</p> <p>As funding is available, the agencies would conduct Class III cultural resource inventories in a manner that complies with Section 110 of the NHPA and Section 14 of ARPA and would collaborate with the BEC to gather information on the importance of cultural resources to Tribal Nations, including ethnographic work and traditional knowledge, documentation aspects, recognition of important traditional use areas, and culturally important plants. Agencies would also collaborate with the BEC on the prioritization of information gathering.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>The agencies would conduct Class III cultural resource inventories in a manner that complies with Section 110 of the NHPA and Section 14 of ARPA and would collaborate with the BEC to identify funding and gather information on the importance of cultural resources to Tribal Nations and other culturally affiliated Tribal Nations, including ethnographic work and traditional knowledge, culturally appropriate documentation, recognition of important traditional use areas, and culturally important plants. Agencies would also collaborate with the BEC on the prioritization of information gathering and the appropriateness of information sharing.</p>
<p>Per 2020 ROD/MMPs</p> <p>Collaborate with Tribal Nations to allocate cultural resources to uses. Within RMZs that have a frontcountry focus (as discussed in Appendix I of the 2020 ROD/MMPs), work with the Tribes to allocate other public sites that would be categorized as either Developed Public Use or Undeveloped Public Use for sites that allow a sense of discovery. Within RMZs that have a backcountry focus, sites would generally be categorized as Scientific Use, Traditional Use, Public Use (Undeveloped). These allocations would be consistent with recreational outcome-based goals and objectives for these RMZs. Additional criteria for future allocation of sites are provided in Appendix G of the 2020 ROD/MMPs.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Agencies would collaborate with the BEC to identify which additional cultural resource sites to prioritize for allocation to uses through area- or resource-specific implementation-level plans to be completed prior to the broader CRMP. Any other cultural resources would be allocated in the CRMP. Based on levels of use, type of site, and sensitivity of sites, as determined in collaboration with the BEC and Tribal Nations, sites would be categorized as Developed Public Use, Undeveloped Public Use, Scientific Use, Traditional Use, or Public Use (Undeveloped).</p>
<p>Per 2020 ROD/MMPs</p> <p>The agencies would allocate the following cultural sites as Public Use (Developed) because they are currently managed as Public Use sites and are currently subject to high visitation:</p> <ul style="list-style-type: none"> • Newspaper Rock • Shay Canyon • Butler Wash Developed Roadside • Mule Canyon Kiva • River House • Butler Wash Panel • Arch Canyon Great House complex • House on Fire • Moon House • Doll House Ruin • Hole-in-the-Rock Trail • San Juan Hill • Butler Wash Dinosaur Tracksite • Lower Butler Wash Panel • Salvation Knoll 	<p>The agencies would collaborate with the BEC to develop management direction for Public Use Developed sites. The agencies would consult with the BEC, Tribal Nations, the MAC, and the public, as appropriate, to add or remove sites to this list as necessary. The following cultural sites would be allocated as Public Use (Developed):</p> <ul style="list-style-type: none"> • Same as Alternative A, with the exception of • Sand Island Upper and Lower Panels • The Citadel <ul style="list-style-type: none"> ◦ Dry Wash Caves • Sites within the Comb Ridge RMZ chosen in coordination with the BEC • Sites in the Beef Basin Extensive Recreation Management Area chosen in coordination with the BEC • The following sites, if acquired, would be allocated for Public Use (Developed): <ul style="list-style-type: none"> ◦ Seven Kivas ◦ Cave Towers 	<p>The agencies would collaborate with the BEC to develop management direction for Public Use Developed sites. The agencies would consult with the BEC, Tribal Nations, the MAC, and the public, as appropriate, to add or remove sites to this list as necessary. The following cultural sites would be allocated as Public Use (Developed):</p> <ul style="list-style-type: none"> • Same as Alternative A, with the exception of • Sand Island Upper and Lower Panels <ul style="list-style-type: none"> ◦ The Citadel ◦ Dry Wash Caves • The following sites, if acquired, would be allocated for Public Use (Developed): <ul style="list-style-type: none"> ◦ Seven Kivas ◦ Cave Towers • The following site would be allocated as Public Use Undeveloped: <ul style="list-style-type: none"> ◦ Shay Canyon 	<p>Same as Alternative C.</p>	<p>The agencies would collaborate with the BEC to develop management direction for Public Use Developed sites. The agencies would consult with the BEC, Tribal Nations, the MAC, and the public, as appropriate, to add or remove sites to this list as necessary.</p> <p>The following cultural sites would be allocated as Public Use (Developed):</p> <ul style="list-style-type: none"> • Dry Wash Caves
<p>No similar management.</p>	<p>The following site would be allocated as Public Use Undeveloped:</p> <ul style="list-style-type: none"> • Sites located within the Cedar Mesa Canyons RMZ chosen in collaboration with the BEC. 	<p>No similar management.</p>	<p>No similar management.</p>	<p>No similar management.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs When identified by Tribes as necessary for ceremonies and gatherings, implement actions to minimize potential conflicts with other resource uses that could interfere with ceremonies and gatherings. Sensitive cultural information would be kept confidential and safeguarded from release to the extent allowed by law.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	When identified by the BEC or Tribal Nations as necessary for ceremonies and gatherings, implement actions to minimize potential conflicts with other resource uses that could interfere with ceremonies and gatherings. Sensitive cultural information would be kept confidential and safeguarded from release to the extent allowed by law.

2.4.15. Cross Cultural Education and Outreach

2.4.15.1. GOALS AND OBJECTIVES

- Ensure that Traditional Indigenous Knowledge and Tribal Nations' ways of knowing are given equal consideration with knowledge derived from a Western scientific paradigm by incorporating Tribal expertise when designing research and educational programs for BENM.
- Ensure the protection of all cultural resources, including those associated with Tribal Nations as well as other occupants of the landscape.
- Establish a reciprocal relationship between Tribes and federal land managers regarding sharing of Traditional Indigenous Knowledge with information collected within a Western scientific paradigm.
- Implement education and interpretation to provide the public a greater respect and understanding of the importance of BENM and the connections between descendant communities and the cultural landscapes of BENM.
- Incorporate Traditional Indigenous Knowledge in the following ways:
 - Consider the intergenerational connection of those that came before and those that have yet to come to this landscape and the responsibility of land management to these generations.
 - Recognize the sacred responsibility to and relationship with the landscape; facilitate access for repatriation to the landscape for communities with ancestral connections to the Monument.
 - Acknowledge humans and human actions as part of nature and natural processes with honorable and respectful harvest of resources traditionally used by Indigenous communities as a part of reciprocity-based land management consistent with protection of Monument objects.

2.4.15.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would collaborate with Tribal Nations to develop interpretive messages and educational materials that tell the history of BENM from the Tribal Nations' perspective and their relationship to these sacred lands.
- Collaborate with the BEC to develop a comprehensive interpretive plan or plans for BENM. The interpretive plan(s) would follow BLM and USDA Forest Service guidelines and define the BLM's and USDA Forest Service's overall interpretation and education vision, goals, themes, strategies, and opportunities. The interpretive plan would include a long-range implementation strategy that includes partnership development, staffing needs, and program costs.
- Coordinate with the MAC and local government during implementation-level development of plans, including interpretive plan(s).
- Collaborate with the BEC for the development of an interdisciplinary Traditional Knowledge Institute under the collaborative management of Tribal Nations and federal agencies with the following emphasis areas:
 - A natural history program that may include traditional indigenous perspectives on plants, animals, geology, paleontology, astronomy, and water resources, as well as a BENM catalog that includes Tribal Nations' names, traditional uses, and narratives surrounding natural resources in the area. This catalog would help preserve Traditional Indigenous Knowledge and, as appropriate, serve as a foundation for educational programs and interpretation throughout BENM.
 - Curriculum development with an emphasis on Traditional Indigenous Knowledge. Scientific data that are generated in BENM would be used to create curricula for people and provide Traditional Indigenous Knowledge for educational purposes. Curricula would be reviewed by individual Tribal Nations to be shared outside of their communities so that culturally sensitive information is not made public.
 - Develop opportunities to engage Tribal youth in the culture and traditions of the Bears Ears landscape, as well as the protection and management of BENM to cultivate a shared understanding of BENM's context and a shared stewardship for its resources.
 - Collaborate with the BEC for the development of a cultural ranger program that emphasizes a Traditional Indigenous Knowledge approach to the cultural landscape. This program would be open to Tribal members and would support site monitoring and training of site stewards.
 - In collaboration with the BEC, develop training for agency employees about specialized knowledge and issues important to Tribes of the BEC, such as cultural sensitivity protocols, Tribal legal rights, treaty obligations, Tribal sovereignty, traditional indigenous perspectives on BENM, and the application of Traditional Indigenous Knowledge in management decision-making.
 - Collaborate with the BEC to facilitate educational opportunities at BENM with Tribal communities, youth, elders, or other similar groups, including the development of a Tribal learning center and learning spaces and places such as the Kigalia Guard Station.
 - Collaborate with the BEC to develop agency training opportunities for members of Tribal Nations on land management topics, including but not limited to NEPA, lands and realty, cadastral surveys, wildfire and fuels management, and heritage resources.
- Collaborate with the BEC and local governments in the consideration of the need for and location of a visitor center or visitor centers as part of future implementation-level planning.

- Collaborate with the BEC to develop outfitter and guide training to educate SRP and special use permit (SUP) holders and participants about the cultural history of BENM, visitor etiquette education, and cultural resources important to the protection of BENM objects.
- Collaborate with the BEC to develop a woodcutter education program to educate woodcutters regarding wood cutting safety; authorization requirements; wood cutting opportunities and impacts; traditional indigenous values associated with forestry; and the importance of forestry to the protection of BENM objects.
- Collaborate with the BEC to provide educational outreach and interpretation of terrestrial and aquatic wildlife, including species of traditional importance to Tribal Nations.
- Collaborate with the BEC to identify opportunities to educate the public about the importance of the soundscape to protect BENM objects and etiquette regarding the respectful use of the land and minimizing additional noise.
- Collaborate with the BEC to create interpretive materials that highlight Tribal Nations' connections to distant areas visible from vantage points within the Monument.
- Collaborate with the BEC to provide educational outreach and interpretation about paleontological resources, including the importance of their protection and preservation.

2.4.15.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-14. Alternatives for Cross Cultural Education and Outreach

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
No corresponding management under Alternative A.	Collaborate with the BEC to develop an interpretation plan, with an emphasis on on-site interpretation.	Same as Alternative E.	Same as Alternative E.	Same as Alternative B, except that on BLM-administered lands, on-site interpretation would mostly be confined to cultural sites allocated for Public Use (Developed) and areas managed as Front Country and Passage Zones. On NFS lands, this would be applied to Roaded Natural and Semi-Primitive Motorized Recreation Opportunity Spectrum classes. Interpretation in areas managed as Outback and Remote Zones without recreational development and/or motorized access would be off-site interpretation unless on-site guidance is required to address impacts to the protection of BENM objects. For NFS lands this would apply to Semi-Primitive Non-Motorized and Primitive Recreation Opportunity Spectrum classes.
No corresponding management under Alternative A.	The BLM would work with the BEC to develop an interpretive plan specific to the Cedar Mesa area. The plan would identify themes and stories that the Tribal Nations want to convey to visitors but would primarily focus on information regarding cultural and natural resources protection. The plan would also identify methods (signs, printed materials, audio-visual methods) appropriate for each RMZ. Physical infrastructure to support interpretation would be emphasized under this alternative.	Same as Alternative B except physical infrastructure would be mostly limited to the Trail of the Ancients RMZ. Emphasis for interpretation and education would be via Individual Special Recreation Permits and off-site means.	Same as Alternative E.	Same as Alternative B, with the exception that the emphasis for interpretation and education would be via Individual Special Recreation Permits and off-site means for the entire Cedar Mesa area.

2.4.16. Air Quality

2.4.16.1. GOALS AND OBJECTIVES

- Protect and enhance air quality and AQRVs (e.g., visibility) by ensuring that all authorized uses on public lands comply with and support federal, state, and local laws and regulations for protecting air quality.
- Minimize fugitive dust within BENM by enacting management as appropriate to protect soil resources and minimize erosion.
- Incorporate Traditional Ecological Knowledge and Tribal expertise of the BEC and Tribal Nations to protect air quality as a culturally important value of the BENM cultural landscape along with best available science to monitor, protect, and enhance air quality and AQRVs (e.g., visibility) to maintain visual resources and dark night skies priorities and values identified in the 2022 BEITC LMP.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.16.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Manage emissions and discretionary actions in BENM to enhance air quality; maintain wilderness character for designated wilderness; and to protect BENM objects.
- Management would collaborate with the BEC in identifying opportunities for climate change resiliency, in accordance with climate change research and Traditional Indigenous Knowledge, wherever practicable.

- Manage emissions and discretionary actions in BENM to ensure compliance with state and federal air quality standards.
- Collaborate with the BEC, Tribal Nations, local and county governments, and local communities to protect and enhance air quality within the Monument.

2.4.16.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-15. Alternatives for Air Quality

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2008 Monticello RMP The Best Available Control Technology, recommended by Utah Division of Air Quality (UDAQ), would be applied as needed to meet air quality standards.	In collaboration with UDAQ, BEC, and Tribal Nations, the agencies would implement BMPs, emission controls, and site-specific mitigation measures, as appropriate, to reduce emissions and enhance air quality.	Same as Alternative B.	Same as Alternative B.	In coordination with UDAQ, the EPA, the BEC, and Tribal Nations, the agencies would implement applicable federal and/or state air pollution laws, regulations, and plans; emission controls; and site-specific mitigation measures, as appropriate, to reduce emissions and enhance air quality. This includes, but is not limited to, emissions of pollutants like methane.
Per 2008 Monticello RMP Prescribed burns would be consistent with the UDEQ permitting process and timed in conjunction with meteorological conditions so as to minimize smoke impacts.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Agencies would collaborate with the BEC, Tribal Nations, and UDEQ to time and implement prescribed burns in conjunction with meteorological conditions to minimize smoke impacts, particularly on sensitive receptors.
Per 2008 Monticello RMP The BLM would comply with UAC Regulation R307-205, which prohibits the use, maintenance, or construction of roadways without taking appropriate dust abatement measures.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Agencies would comply with UAC R307-205, which prohibits the use, maintenance, or construction of roadways without taking appropriate dust abatement measures.
Per 2008 Monticello RMP The BLM would comply with the current smoke management MOA between the BLM, the USDA Forest Service, and UDAQ. The MOA, in accordance with UAC Regulation R301-204, requires reporting the size, date of burn, fuel type, and estimated air emissions from each prescribed burn.	The agencies would comply with the Utah Smoke Management Plan, which requires reporting size, date of burn, fuel type, and estimated air emissions from each prescribed burn.	Same as Alternative B.	Same as Alternative B.	The agencies would comply with the Utah Smoke Management Plan, which requires reporting size, date of burn, fuel type, and estimated air emissions from each prescribed burn. Collaborate with the BEC and Tribal Nations to ensure that prescribed burns are conducted in a way that is culturally appropriate, including seasonal appropriateness.
Per 2008 Monticello RMP The BLM would manage emissions to prevent deterioration to air quality in Class I airsheds.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	The agencies would manage emissions to prevent adverse impact to air quality in Class I airsheds.
Per 2008 Monticello RMP The BLM would continue to work cooperatively with state, federal, and Tribal entities in developing air quality assessment protocols to address cumulative impacts and regional air quality issues.	Agencies would collaborate with the BEC, Tribal Nations, the NPS, and other state and federal agencies to develop air quality assessment protocols to address cumulative impacts to haze, dark skies, and other regional air quality issues.	Same as Alternative B.	Same as Alternative B.	Agencies would collaborate with the BEC, Tribal Nations, the NPS, and other state and federal agencies to develop air quality assessment protocols to address cumulative impacts of haze and other airborne pollutants on dark night skies and regional air quality. Agencies would collaborate with the BEC and Tribal Nations to ensure that air quality assessment protocols are conducted in a way that is culturally appropriate, including seasonal appropriateness, and consistent with the cultural resources implementation plan.
Per 2008 Monticello RMP The BLM would continue to work cooperatively with the Utah Airshed Group to manage emissions from wildland and prescribed fire activities.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Agencies would collaborate with the BEC, Tribal Nations, and the Utah Airshed Group to manage emissions from wildland and prescribed fire activities.
Per 2008 Monticello RMP NAAQS are enforced by UDAQ, with EPA oversight. Special requirements to reduce potential air quality impacts would be considered on a case-by-case basis in processing land-use authorizations.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Agencies would consider special requirements to reduce potential air quality impacts on a case-by-case basis in processing land use authorizations.
Per 2008 Monticello RMP The BLM would utilize BMPs and site-specific mitigation measures, when appropriate, based on site-specific conditions, to reduce emissions and enhance air quality. Examples of these types of measures can be found in the Four Corners Air Quality Task Force Report of Mitigation Options (FCAQTF 2007), November 1, 2007.	See Management Actions Common to All Action Alternatives (Section 2.4.16.2).	See Management Actions Common to All Action Alternatives (Section 2.4.16.2).	See Management Actions Common to All Action Alternatives (Section 2.4.16.2).	See Management Actions Common to All Action Alternatives (Section 2.4.16.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2008 Monticello RMP Project-specific analyses would consider use of quantitative air quality analysis methods (i.e., modeling), when appropriate, as determined by the BLM, in consultation with state, federal, and Tribal entities.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Project-specific analyses would consider use of quantitative air quality analysis methods (e.g., emissions inventory or modeling), when the project has substantial emissions as determined by the agencies, in collaboration with the BEC, Tribal Nations, and state and federal agencies.
Per 1986 Manti-La Sal LRMP Air Resource Management Meet state and federal air quality objectives. FSM 2121. Developed Recreation Sites (DSR) Manage facilities in and adjacent to recreation sites to maintain acceptable levels of air quality. Dark Canyon Wilderness Management (DCW) Protect air quality values from adverse effects from air pollution.	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.16.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.16.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.16.2).	Management not carried forward. See Management Actions Common to All Action Alternatives (Section 2.4.16.2).
As appropriate, quantitative analysis of potential air quality impacts would be conducted for project-specific developments.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Prescribed burns would be consistent with the UDEQ permitting process and timed so as to minimize smoke impacts.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Comply with UAC Regulation R446-1. The best air quality control technology, per guidance from UDAQ, would be applied to actions on public lands as needed to meet air quality standards.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Comply with UAC Regulation R446-1-4.5.3, which prohibits the use, maintenance, or construction of roadways without taking appropriate dust abatement measures. Compliance would be obtained through special stipulations as a requirement on new projects and through the use of dust abatement control techniques in problem areas.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Manage all BLM and BLM-authorized activities to maintain air quality within the thresholds established by the State of Utah Ambient Air Quality Standards and to ensure that those activities continue to keep the area as attainment, meet Prevention of Significant Deterioration Class II standards, and protect the Class I airshed of the national parks (e.g., Arches and Canyonlands National Parks).	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Comply with the current smoke management memorandum of understanding between the BLM, USDA Forest Service, and UDAQ. The memorandum of understanding, in accordance with UAC Regulation R446-1-2.4.4, requires reporting the size, date of burn, fuel type, and estimated air emissions from each prescribed burn.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
The BLM would continue to work cooperatively with state, federal, and Tribal entities in developing air quality assessment protocols to address cumulative impacts and regional air quality issues.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
The BLM would continue to work cooperatively with the Utah Airshed Group to manage emissions from wildland and prescribed fire activities.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
NAAQS are enforced by UDAQ, with EPA oversight. Special requirements to reduce potential air quality impacts would be considered on a case-by-case basis in processing land use authorizations.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
The BLM would utilize BMPs and site-specific mitigation measures, when appropriate, based on site-specific conditions, to reduce emissions and enhance air quality. Examples of these types of measures can be found in the Four Corners Air Quality Task Force Report of Mitigation Options, November 1, 2007 (FCAQTF 2007).	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Project-specific analyses would consider use of quantitative air quality analysis methods (i.e., modeling), when appropriate, as determined by the BLM, in consultation with state, federal, and Tribal entities.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

2.4.17. Fire Management

2.4.17.1. GOALS AND OBJECTIVES

- Firefighter and public safety are the primary goals in all fire management decisions and actions. The agencies, in collaboration with the BEC and Tribal Nations, would implement a consistent, safe, and cost-effective fire management program through appropriate planning, staffing, training, and equipment.
- Fires would be managed to account for firefighter and public safety and protect benefits and values that are consistent with the protection of BENM objects.
- Fuels would be proactively managed by the agencies in collaboration with the BEC in BENM to protect BENM objects.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.17.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would collaborate with the BEC and Tribal Nations when planning fuels treatments in the appropriate, conditions, and areas to protect BENM objects.
- Through implementation-level fire management planning, fire management objectives and actions would be established for every area with burnable vegetation, based on sound science and Traditional Indigenous Knowledge, with consideration of other resource objectives.
- Agencies would coordinate with the BEC, Tribal Nations, and state and local government in developing implementation-level fire plans.
- Agencies would collaborate with the BEC to protect culturally modified trees during vegetation treatments and fire suppression, as practicable.
- Emergency Stabilization and Rehabilitation (ESR) and restoration efforts following wildfires would be implemented to protect and sustain resources, including cultural resources, public health and safety, and community infrastructure.
- The agencies would work with the BEC, other partners, and impacted groups and individuals to reduce risks from wildfires to communities and to restore ecosystems.
- Wildland fire would be used to protect, maintain, and enhance resources, and when possible, would be allowed to function in its natural ecological role.
- Appendix D: Desired Wildland Fire Condition and Condition Class identifies the different fire management allowed for BENM.
- The agencies would use best and current available tools, including Traditional Indigenous Knowledge, sound science, and the Wildland Fire Decision Support System (WFDSS), in making strategic and tactical decisions for fire incidents.
- Agencies, in collaboration with the BEC, would protect and/or enhance culturally important plant populations and communities during vegetation treatments.

2.4.17.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-16. Alternatives for Fire Management

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs Protection of human life would be the primary fire management priority. Establishing a priority among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources would be based on human health and	Same as Alternative A with the following additions: <ul style="list-style-type: none"> • Protection of riparian, wetland, and water resources would be a priority. • Where practicable, wood/biomass generated by vegetation treatments would be made available for Tribal and public use. 	Same as Alternative B.	Same as Alternative B with the following addition: <ul style="list-style-type: none"> • Agencies would avoid the construction of fire lines within 50 feet of all riparian, wetland, and water resources unless necessary to protect human life and/or BENM objects. 	Protection of human life would be the primary fire management priority. Establishing a priority among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources would be based on human health and safety, the values to be protected, and the costs of

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>safety, the values to be protected, and the costs of protection. Fire management decisions and actions would consider the following:</p> <ul style="list-style-type: none"> • Protection of cultural resources and/or cultural landscapes. • Maintaining existing healthy ecosystems. • High priority subbasins or watersheds, including watersheds that are impaired or that support important natural or cultural resources. • Habitat needs of threatened, endangered, or special status species. • Protection of recreation sites. • Protection of property. 	<ul style="list-style-type: none"> • Protection of other identified Monument objects. 			<p>protection. Fire management decisions and actions would consider the following:</p> <ul style="list-style-type: none"> • Protection of cultural resources and/or cultural landscapes. • Maintaining existing healthy ecosystems and environmental and ecological resources. • High priority subbasins or watersheds, including watersheds that are impaired or that support important natural or cultural resources. • Habitat, connectivity, and migration needs of threatened, endangered, or special status species, including culturally important species. • Protection of riparian, wetland, and water resources would be a priority. • Agencies would avoid the construction of fire lines within 50 feet of all riparian, wetland, and water resources; critical habitat; and cultural sites unless necessary to protect human life and/or BENM objects. • Foam retardant or any other chemical spraying would not be used for fire suppression within 300 feet of perennial waterbodies (riparian areas, wetlands, springs) except for protection of human lives. Potential damage to other ecological or cultural resources should be considered when using foam retardant. • Where practicable, wood/biomass generated by vegetation treatments would be made available for Tribal and public use. • Protection of recreation sites. • Protection of property.
<p>Per 2020 ROD/MMPs</p> <p>Wildfires may be managed to meet resource objectives except when the following resources and values may be negatively impacted and there are no reasonable resource protection measures to protect such resources and values:</p> <ul style="list-style-type: none"> • Areas known to be highly susceptible to post-fire cheatgrass (<i>Bromus tectorum</i>) or invasive weed invasion • Important terrestrial and aquatic habitats • Riparian habitat • Non-fire-adapted vegetation communities • Sensitive cultural resources • Areas of soil with high or very high erosion hazard • Administrative sites • Developed recreation sites • Communication sites 	<p>Same as Alternative A, with the following additions:</p> <ul style="list-style-type: none"> • Traditional use sites that might be vulnerable to damage from fire. • Areas of special spiritual significance to Indigenous communities. • Fire management in areas of traditional use that might be vulnerable to fire would be identified by the BEC and would emphasize Traditional Ecological Knowledge and traditional techniques. 	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Wildfires may be managed to meet resource objectives, except when the following resources and values may be impacted, and there are no reasonable resource protection measures to protect such resources and values:</p> <ul style="list-style-type: none"> • Areas known to be highly susceptible to post-fire cheatgrass (<i>Bromus tectorum</i>) or invasive weed invasion. • Important terrestrial and aquatic habitats • Habitat connectivity and migration corridors • Riparian habitat • Non-fire-adapted vegetation communities. • Sensitive cultural resources. • Areas of soil with high or very high erosion hazard. • Administrative sites. • Developed recreation sites. • Communication sites. • Traditional use sites that might be vulnerable to damage from fire. • Areas of special cultural significance to Indigenous communities that would be vulnerable to damage from fire. • Fire management in areas of traditional use that might be vulnerable to fire would be identified by the BEC and would emphasize Traditional Indigenous Knowledge and traditional techniques.
<p>Per 2020 ROD/MMPs</p> <p>Fuels work in the Arch Canyon IRA would be consistent with the 2001 Roadless Rule (36 CFR 294).</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs All prescribed burns would require coordination with agency biologists to ensure compliance with the MBTA and ESA.	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
Per 2020 ROD/MMPs Initial attack and fire suppression: Restrict heavy equipment line construction in riparian areas unless other values are at risk. Avoid aquatic and riparian ecosystems with this equipment to the extent possible.	Initial attack and fire suppression: <ul style="list-style-type: none"> Restrict heavy equipment line construction in riparian areas unless life, property, and/or BENM objects are at risk. Avoid aquatic and riparian ecosystems with this equipment to the extent possible (2020 ROD/MMPs). 	Same as Alternative B.	Same as Alternative B.	Initial attack and fire suppression: Heavy equipment would not be used in riparian areas unless absolutely necessary to protect human life and/or resiliency of BENM objects.
Per 2020 ROD/MMPs Mechanical treatments would be allowed only in those areas where the BLM has determined that it would be consistent with the proper care and management of BENM objects.	Management not carried forward (see Section 2.4.7, Vegetation).	Management not carried forward (see Section 2.4.7 Vegetation).	Management not carried forward (see Section 2.4.7 Vegetation).	Management not carried forward (see Section 2.4.7 Vegetation).

2.4.18. Health and Safety

2.4.18.1. GOALS AND OBJECTIVES

- Agencies would strive to ensure that human health and safety is maintained on public lands.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.18.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Use, transportation, storage, and disposal of hazardous materials would comply with the applicable federal and state laws. Use of pesticides and herbicides would be used only in accordance with their registered uses and within limitations imposed by agency guidance, developed in collaboration with the BEC.
- Agencies would collaborate with the BEC to effectively manage hazardous risks on public lands to protect the health and safety of public land users, stewards, and wildlife; protect natural, environmental, and cultural resources; minimize future hazardous and related risks, costs, and liabilities; and mitigate physical hazards in compliance with all applicable laws, regulations, and policies.
- Agencies would collaborate with the BEC, Tribal Nations, federal and state agencies, and county and local governments in planning and implementing search and rescue operations. Emergency situations such as search and rescue operations would be prioritized as necessary to provide for the protection of the health and safety of public land users to the extent possible.
- Agencies would collaborate with the BEC to ensure that human health and safety concerns on the public lands they manage are appropriately mitigated.
- The agencies would work with the BEC, Tribal Nations, and other partners to identify and address physical safety and environmental hazards at all AML sites on public lands.
- The agencies would collaborate with the BEC to identify and clean up unauthorized disposals and other areas in BENM.
- The BEC and the agencies would collaborate to identify and monitor potential radioactive contamination in the Monument, including monitoring of vegetation, fish and wildlife, and water quality. Where radioactive contamination is detected, appropriate mitigation measures would be identified by the agencies in collaboration with the BEC.

2.4.18.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-17. Alternatives for Health and Safety

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2008 Monticello RMP Human Health and Safety The BLM would strive to ensure that human health and safety concerns on the public lands it administers are appropriately mitigated if determined hazardous.	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).
Per 2008 Monticello RMP Abandoned Mine Lands In conformance with the BLM's long-term strategies and national policies regarding AMLs, this RMP/EIS recognizes	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).	See Management Actions Common to All Action Alternatives (Section 2.4.18.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>the need to work with our partners toward identifying and addressing physical safety and environmental hazards at all AML sites on public lands. In order to achieve this goal, a state strategy, titled <i>Utah Abandoned Mine Land Multi-Year Work Plan</i>, has been written. National program criteria for determining site priorities were used to develop the work plan. The following criteria would be established to assist in determining priorities for site and area mitigation and reclamation.</p> <p>AML Physical Safety Program Priorities:</p> <ul style="list-style-type: none"> • Highest priority would be cleaning up AML sites where (a) a death or injury has occurred, (b) the site is situated on or in immediate proximity to developed recreation sites and areas with high visitor use, or (c) upon formal risk assessment, a high or extremely high risk level is indicated: <ul style="list-style-type: none"> ○ AMLs would be factored into future recreation management area designations, land use planning assessments, and all applicable use authorizations. ○ The site is presently listed or is eligible for listing in the Abandoned Mine and Site Cleanup Module Database. ○ AML hazards should be, to the extent practicable, mitigated or remediated on the ground during site development. ○ AML water-quality program priorities are where the state has identified the watershed as a priority based on 1) one or more water laws or regulations; 2) threat to public health or safety; 3) threat to the environment; 4) the project reflects a collaborative effort with other land managing agencies; 5) the site is presently listed or is eligible for listing in the Abandoned Mine and Site Cleanup Module Database; and 6) the project would be funded by contributions from collaborating agencies. 				
<p>Per 2008 Monticello RMP Acquisitions/Exchanges</p> <p>These priorities would be maintained and updated as needed in the state AML strategy.</p> <p>The BLM would identify and clean up unauthorized dumping and shooting areas in the [Planning Area] as required to comply with applicable state, local, and federal regulations. These would include areas such as the unauthorized shooting range west of Blanding, dumps near Hovenweep, the Monticello Airport, and Paiute Knoll.</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.18.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.18.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.18.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.18.2).</p>

2.4.19. Lands and Realty

2.4.19.1. GOALS AND OBJECTIVES

- Ensure lands and realty actions are consistent with the protection of BENM objects.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.19.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Subject to valid existing rights, BENM is withdrawn from all forms of entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the BLM and USDA Forest Service from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of BENM.
- Nothing in this RMP/EIS would revoke any existing withdrawal, reservation, or appropriation; however, BENM would be the dominant reservation.
- Acquisition of lands or interests therein within BENM would be pursued with willing sellers or by donation where it would provide for the protection of the objects for which BENM was designated. Any acquired lands would be managed as a portion of BENM in the same manner as adjacent lands in BENM unless they require specific management related to the protection of BENM objects.

- Agencies would collaborate with the BEC on lands and realty actions, including seasonality and resource rest.
- Agencies would work with private landowners on reasonable access as consistent with Proclamation 10285.
- Per BLM Manual 6330, USDA Forest Service Manual 2300, and congressional action, WSAs and wilderness areas would be exclusion areas for any ROWs (FLPMA Section 501(a)). As per State of Utah v. Andrus, October 1, 1979 (Cotter Decision), the BLM would grant the State of Utah reasonable access to state lands for economic purposes on a case-by-case basis.

2.4.19.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-18. Alternatives for Lands and Realty

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs</p> <p>The Indian Creek Unit would be open for ROWs except for the following exclusion and avoidance areas (Appendix A, Figure 2-20, Alternative A, rights-of-way and authorizations), and the Shash Jaa Unit would be a BLM ROW and USDA Forest Service Special Use Authorization avoidance area (Appendix A, Figure 2-20, Alternative A, rights-of-way and authorizations) with the following exceptions:</p> <ul style="list-style-type: none"> • Exclusion areas (11,376 acres) <ul style="list-style-type: none"> ○ Bridger Jack Mesa WSA ○ Mule Canyon WSA ○ Fish Creek Canyon WSA ○ Designated wilderness • Avoidance areas (124,505 acres): <ul style="list-style-type: none"> ○ Shay Canyon ACEC ○ Developed recreation sites ○ Designated utility corridors ○ Active floodplains, riparian areas, springs, and public water reserves ○ Lavender Mesa ACEC 	<p>On BLM-administered lands, ROW open areas would include (5,477 acres) (Appendix A, Figure 2-21, Alternative B, rights-of-way and authorizations):</p> <ul style="list-style-type: none"> • Indian Creek Corridor Recreation Management Zone • Utah State Route 95 • Utah State Route 162 • Utah State Route 261 • Utah State Route 275 • Utah State Route 276 • Utah State Route 316 <p>ROW exclusion areas would include (407,038 acres) (Appendix A, Figure 2-21, Alternative B, rights-of-way and authorizations):</p> <ul style="list-style-type: none"> • Designated wilderness • WSAs • All suitable WSR segments classified as wild • Indian Creek ACEC and Valley of the Gods ACEC <p>The rest of the BLM-administered lands in BENM would be ROW Avoidance (662,439 acres) (Appendix A, Figure 2-21, Alternative B, rights-of-way and authorizations).</p>	<p>Same as Alternative E, except:</p> <ul style="list-style-type: none"> • ROW exclusion areas (505,935 acres) would include (Appendix A, Figure 2-22, Alternative C, rights-of-way and authorizations): <ul style="list-style-type: none"> ○ Indian Creek ACEC and Valley of the Gods ACEC • ROW avoidance areas (569,020 acres) (Appendix A, Figure 2-22, Alternative C, rights-of-way and authorizations) 	<p>Same as Alternative E, except:</p> <ul style="list-style-type: none"> • ROW exclusion areas (802,678 acres) would include (Appendix A, Figure 2-23, Alternative D, rights-of-way and authorizations): <ul style="list-style-type: none"> ○ Four areas in Lockhart Basin ○ Indian Creek ACEC, John's Canyon Paleontological ACEC, and Valley of the Gods ACEC • ROW avoidance areas (272,277 acres) (Appendix A, Figure 2-23, Alternative D, rights-of-way and authorizations) 	<p>On BLM-administered lands, ROW exclusion areas (1,058,613 acres) would include (Appendix A, Figure 2-24, Alternative E, rights-of-way and authorizations):</p> <ul style="list-style-type: none"> • Designated wilderness • WSAs • Lands managed for wilderness characteristics • All suitable WSR segments classified as wild or scenic • Indian Creek ACEC, John's Canyon Paleontological ACEC, San Juan River ACEC, and Valley of the Gods ACEC • All areas managed as VRM Class I <p>ROW avoidance areas (16,342 acres) (Appendix A, Figure 2-24, Alternative E, rights-of-way and authorizations)</p>
No corresponding management under Alternative A.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	<p>On NFS lands, ROW (Special Use) exclusion areas would include (46,343 acres):</p> <ul style="list-style-type: none"> • Designated wilderness <p>Other NFS lands within BENM would be USDA Forest Service Special Use Authorization avoidance areas (242,774 acres) (Appendix A, Figure 2-24, Alternative E, rights-of-way and authorizations).</p>
<p>Per 2020 ROD/MMPs</p> <p>ROWs may be issued for maintenance and improvement of existing roads and where necessary to access non-federal inholdings so long as impacts to BENM objects can be avoided or mitigated.</p>	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	ROWs or SUPs may be granted/authorized to access non-federal inholdings so long such a grant/permit is consistent with the protection of BENM objects.
<p>Per 2020 ROD/MMPs</p> <p>To request a ROW within an avoidance area, an applicant would be required to meet, at a minimum, one of the following criteria:</p> <ul style="list-style-type: none"> • The applicant can demonstrate that there is no practicable route outside of the unit. • The proposed ROW would be consistent with the proper care and management of the objects of BENM. 	<p>To request a ROW within an avoidance area, an applicant would be required to meet the following criteria:</p> <ul style="list-style-type: none"> • The applicant can demonstrate that there is no practicable/reasonably necessary route outside of the area. • The proposed ROW would be consistent with protecting BENM objects. 	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
<p>Per 2008 Monticello RMP</p> <p>ROW</p> <p>Applications for new ROWs on public lands would be considered and analyzed on a case-by-case basis, taking into consideration areas identified for avoidance and exclusion.</p>	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Proposals would be reviewed for consistency with planning decisions and evaluated under requirements of applicable laws for resource protection.</p> <p>Consider lands available for ROWs except for exclusion and avoidance areas</p> <p>Exclusion Areas: 402,985 acres in Planning Area</p> <ul style="list-style-type: none"> • WSAs (377,118 acres): (Mancos Mesa, Grand Gulch Instant Study Area (ISA) Complex, Road Canyon, Fish Creek Canyon, Mule Canyon, Cheese Box Canyon, Dark Canyon ISA Complex, Butler Wash, Bridger Jack Mesa, Indian Creek, and South Needles) • Lands administratively endorsed for wilderness by Butler Wash North WSA • Valley of the Gods ACEC (22,716 acres) • San Juan River Segment 5 • Colorado River Segment 3 <p>Avoidance Areas: 147,742 acres in Planning Area</p> <ul style="list-style-type: none"> • Indian Creek ACEC (3,936 acres) • Shay Canyon ACEC (119 acres) • Lavender Mesa ACEC (649 acres) • Non-WSA with wilderness characteristics 48,954 acres: (Dark Canyon, Nokai Dome East, Grand Gulch, and Mancos Mesa). • Comb Ridge Cultural Special Management Area of Cedar Mesa SRMA (42,356 acres) • San Juan River SRMA (except for WSR Segment 5, which is an exclusion area) (2,141 acres) • Colorado River Segment 2 (759 acres) • Developed recreation sites • Floodplains • Riparian areas and springs • Public water reserves 				
<p>Per 1986 Manti-La Sai LRMP</p> <p>ROWs and Land Adjustments</p> <p>Acquire ROWs for Forest Development Roads and trails that cross private land.</p> <p>Ensure that properties are equal in value on both offered and selected tracts in proposed land exchanges or made equal in cash payment not to exceed 25% of federal value (FLPMA).</p> <p>Classify lands or interest in lands for acquisition where lands are valuable for NFS purposes according to the following priorities:</p> <ul style="list-style-type: none"> • Where lands or ROWs are needed to meet resource management goals and objectives. • Lands that provide habitat for T&E species of animals and plants. • Lands having historical or cultural resources, outstanding scenic values, or critical ecosystems, when these resources are threatened by change of use or when management may be enhanced by public ownership. • When suitable for development by the private sector, if development (e.g., residential, agricultural, industrial, recreational) is in the public interest. • When important or unique resource (e.g., wetlands, floodplains, essential big game winter range, threatened or endangered species habitat, historical or cultural resources, critical ecosystems) effects are mitigated by reserving interests to protect the resource or by exchange 	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>where other critical resources to be acquired are considered to be of equal or greater value.</p> <p>Effect jurisdictional transfers which achieve the following objectives:</p> <ul style="list-style-type: none"> • Reduce duplication of efforts by users and agencies in terms of time, cost, and coordination. • Improve or maintain user access to the administering agency. • Decrease travel and enhance management. • Improve public understanding of applicable laws, regulations, policies, and procedures. • Create more effective work units. • Reduce administrative cost. <p>Key Big-Game Winter Range (KWR) and General Big-Game Winter Range (GWR)</p> <ul style="list-style-type: none"> • Acquire private lands or obtain wildlife habitat easements needed for big game winter range. <p>Location of Utility Corridors (UC)</p> <p>Considerations of proposed future corridor designations should follow the process and definitions established in Appendix D of the 1986 Manti-La Sal LRMP.</p> <p>Utility corridors are excluded from wilderness (WDN) and RNAs.</p> <p>Avoid the following management units unless studies that the impact of the corridor can be mitigated:</p> <ul style="list-style-type: none"> • Developed Recreation Sites (DRS) • Riparian (RPN) • Research, Protection, and Interpretation (RPI), and Municipal Water Supply (MWS) • Administrative Sites and Special Use • Semi-primitive Recreation (SPR) 				
<p>Per 2020 ROD/MMPs</p> <p>Minimum-impact filming criteria: Filming would be allowed in all areas, provided the following criteria are met:</p> <ul style="list-style-type: none"> • The project would not adversely impact sensitive habitat or species. • The project would not adversely impact American Indian sacred site(s), nor adversely affect National Register-eligible sites. • The project would not involve the use of pyrotechnics more than a campfire in an appropriate setting. • Filming would be allowed in all areas, provided impacts to land, air, or water can be avoided, mitigated, or reclaimed and all regulatory requirements can be met (e.g., Wilderness Act, ESA) • The project would not involve the use of explosives. • The project, if it involves the use of livestock or exotic animal species, would provide certified weed-free feed for those animals and would include provisions for containment and/or capture of animals. • The project would not involve extensive restriction of public access. • Limited filming would be allowed in areas with the following sensitive resources, provided that impacts to these sensitive resources can be avoided, mitigated, or reclaimed: <ul style="list-style-type: none"> ○ Historic, cultural, or paleontological sites ○ American Indian sacred sites 	<p>Minimum impact filming criteria: Commercial filming would be allowed in all areas with the exception of designated wilderness and USDA Forest Service Recommended Wilderness, provided the following criteria are met:</p> <ul style="list-style-type: none"> • The project would not adversely impact sensitive habitat or species. • The project would not adversely impact Tribal Nations' sacred site(s), nor adversely affect National Register-eligible sites. • The project would not involve use of pyrotechnics or explosives more than a campfire in an appropriate setting. • The project, if it involves use of livestock or exotic animal species, would provide certified weed-free feed for those animals and would include provisions for containment and/or capture of animals. • The project would not involve extensive restriction of public access. • Limited filming would be allowed in areas with the following sensitive resources provided that impacts to these sensitive resources can be avoided, mitigated, or reclaimed: <ul style="list-style-type: none"> ○ Historic, cultural, or paleontological sites ○ Tribal Nations' sacred sites ○ Sensitive soils ○ Air quality ○ Special status species or habitat ○ Relict environments 	<p>Same as Alternative B with the following exception:</p> <ul style="list-style-type: none"> • Aircraft and unmanned aircraft systems (UASs) would not be allowed for commercial filming permits. 	<p>Same as Alternative E.</p>	<p>No commercial filming would be allowed.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> ○ Sensitive soils ○ Air quality ○ Sensitive species or habitat ○ Relict environments ○ Wetlands, floodplains, or riparian areas ○ Water quality ○ Wildlife habitat ○ ACECs ○ Wilderness, WSAs, and lands managed to protect wilderness characteristics ● Use of heavy equipment would be allowed, provided that any resource damage can be avoided, mitigated, or reclaimed. ● Criteria for use of aircraft (helicopter, fixed wing, hot air balloons, excluding UASs/drones) would be as follows: <ul style="list-style-type: none"> ○ No landing or refueling would be conducted within WSAs and designated wilderness areas. ○ Use of aircraft in an area with wildlife concerns would be allowed if a survey or inventory by an approved biologist demonstrates that animals are not present or, if animals are present, aircraft use is not proposed for more than 1 day and does not exceed the frequency of two projects per 30-day period. ○ Use of aircraft in areas with high recreational use, WSAs, or areas close to residences is proposed for no more than 2 days and does not exceed the frequency of three 2-day projects per 30-day period. ○ Aircraft use proposed within 0.5 mile of any designated campground would be during low-use times (i.e., weekdays and not during major holidays between 8:00 a.m. and 6:00 p.m.). ○ No landing, taking off, or dropping or picking up any material or supplies with a flying apparatus or operating aircraft within designated wilderness. Film permittees would observe FAA flight advisory(s) for flying over designated wilderness. 	<ul style="list-style-type: none"> ○ Wetlands, water resources, or riparian areas ○ Water quality ○ Wildlife habitat ○ ACECs ○ WSAs, and lands managed to protect wilderness characteristics ● Use of heavy equipment would be allowed, provided that any resource damage can be avoided, mitigated, or reclaimed. ● Criteria for use of aircraft (helicopter, fixed wing, hot air balloons, excluding UAS) would be as follows: <ul style="list-style-type: none"> ○ No landing or refueling would be conducted within WSAs. ○ Use of aircraft in an area with wildlife concerns would be allowed if a survey or inventory by an approved biologist demonstrates that animals are not present or, if animals are present, aircraft use is not proposed for more than 1 day and does not exceed the frequency of two projects per 30-day period. ○ Use of aircraft in areas with high recreational use, WSAs, or areas close to residences is proposed for no more than 2 days and does not exceed the frequency of three 2-day projects per 30-day period. ○ Aircraft use proposed within 0.5 mile of any designated campground would be during low-use times. 			
<p>Per 2020 ROD/MMPs</p> <p>Additional minimum-impact filming criteria for WSAs on BLM-administered lands:</p> <ul style="list-style-type: none"> ● If the WSA is designated as wilderness during ongoing filming, the filming would cease until the BLM determines whether, and under what criteria, filming may continue. ● The project would not involve the use of more than 20 livestock in these locations. Impacts from livestock can be avoided, mitigated, or reclaimed. ● The project would not involve 15 or more production vehicles. Vehicles would only be allowed on WSA or designated wilderness boundary roads. ● The project would not involve more than 50 people within these areas. ● The activity within these areas would not continue in excess of 10 days. 	<p>Same as Alternative A with the following exception:</p> <ul style="list-style-type: none"> ● No landing, taking off, or dropping or picking up any material or supplies with a flying apparatus. 	<p>Same as Alternative B.</p>	<p>Same as Alternative E.</p>	<p>No filming permits would be issued in WSAs.</p>
<p>Per 2020 ROD/MMPs</p> <p>The agencies would give land exchanges with the State of Utah priority consideration in terms of acquiring land consistent with the management of BENM objects.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>
<p>Per 2020 ROD/MMPs</p> <p>Retain existing designated corridors. Do not designate new corridors.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2008 Monticello RMP</p> <p>The BLM would not transfer out of federal ownership any habitat for listed threatened or endangered species or any habitat for non-listed special status species if it could be determined that such an action would lead to the need to list any species as threatened or endangered. Acquisition of potential/occupied special status species habitat would be high priority. These acquired/exchanged lands would be managed according to BLM land management prescriptions for special status species.</p>	<p>See Management Actions Common to All Action Alternatives in Section 2.4.12.2, Special Status Species.</p>	<p>See Management Actions Common to All Action Alternatives in Section 2.4.12.2, Special Status Species.</p>	<p>See Management Actions Common to All Action Alternatives in Section 2.4.12.2, Special Status Species.</p>	<p>See Management Actions Common to All Action Alternatives in Section 2.4.12.2, Special Status Species.</p>
<p>Per 2008 Monticello RMP</p> <p>Land Tenure Adjustments</p> <p>Lands would be considered for acquisition if the changes are in accordance with resource management objectives and other RMP decisions, and would meet one or more of the following criteria as outlined by BLM land tenure adjustment criteria:</p> <ul style="list-style-type: none"> • Such changes are determined to be in the public interest and would accommodate the needs of local and state governments, including needs for the economy, public purposes, and community growth. • Such changes would result in a net gain of important and manageable resources on public lands such as crucial wildlife habitat, important cultural sites, quality riparian areas, live water, listed species habitat, or areas key to productive ecosystems. • Such changes would ensure public access to lands in areas where access is needed and cannot otherwise be obtained. • Such changes would promote effective management and meet essential resource objectives through landownership consolidation. • Such changes would result in acquisition of lands that serve regional or national priorities identified in applicable policy directives. • Such changes have been identified in existing activity plans (i.e., habitat management plans). • Acquisitions would be managed in the same manner as adjoining lands unless they are acquired for a specific purpose (i.e., wildlife habitat, buffer zones near other federal lands). • A priority section for acquisition would be Utah State Section 2, T39S, R9E to acquire culturally sensitive lands in the McLoyd Canyon–Moon House area. • Give land exchanges with the State of Utah priority consideration to resolve inholdings issues. The BLM would recognize the mission, goals, and objectives of the State of Utah as they relate to the values and resources of state-owned lands. The Monticello FO would work cooperatively with the State of Utah in identifying opportunities for LTAs that may assist the state in furthering its mission. These agreements must comply with applicable law and policy; consider fair market values; consider LTA criteria; and comply with goals and objectives for resource management prescribed in the [2008] RMP. They would be processed on a case-by-case basis, with consideration given to the goals, objectives, and decisions of this [2008] RMP. 	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>
<p>Per 2008 Monticello RMP</p> <p>Recreation and Public Purpose Act and Other Authorizations for Disposal</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.19.2).</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Lands conveyed to state or local governments or non-profit organizations under the Recreation and Public Purpose Act may include those identified in LTAs. In addition, requests for lands other than those identified could be considered for disposal provided the proposed use would provide a greater public benefit than that which the current management provides, and that the action is otherwise consistent with this RMP/EIS. Examples may include, but are not limited to, local government or nonprofit recreational and public purpose facilities such as public shooting ranges, landfills, motocross tracks, and racetracks. Other authorizations for disposal include the Airport and Airway Improvement Act, state selections under the Enabling Act, and other authorities.</p>				
<p>Per 2008 Monticello RMP Wind and Solar Development ROW applications for wind or solar energy development would incorporate BMPs and provisions contained in the 2005 <i>Record of Decision: Implementation of a Wind Energy Development Program and Associated Land Use Plan Amendments</i> (BLM 2005a) or 2012 Western Solar Plan. Both wind and solar energy development are authorized by ROW grants.</p>	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	No wind and solar energy developments would be allowed within BENM.
<p>Per 2008 Monticello RMP Withdrawal Processing and Review Review agency withdrawals and prior Classification and Multiple Use Act classifications according to schedules prepared by the BLM Utah State Office or upon special BLM or agency request. Review other-agency withdrawals (24,140 acres) and withdrawals found to be obsolete can be removed. New withdrawal applications are processed upon request from the BLM or other federal agencies, but withdrawals can be made only by the Secretary or Congress. Support from the BLM Utah State Office and Washington Office would be needed for requests for withdrawal. Interdisciplinary staff support would be needed for coordination and development of site-specific mitigation. Coordination with surface owners, surface-administering agencies, or the State of Utah may also be required. Coordination with the USFWS would be required where threatened or endangered species are involved.</p>	See Management Actions Common to All Action Alternatives (Section 2.4.19.2)	See Management Actions Common to All Action Alternatives (Section 2.4.19.2)	See Management Actions Common to All Action Alternatives (Section 2.4.19.2)	See Management Actions Common to All Action Alternatives (Section 2.4.19.2)
<p>Per 1986 Manti-La Sal LRMP Special-Use Management (Non-recreation) Act on special use applications according to the following priorities:</p> <ul style="list-style-type: none"> • Land and use activity requests relating to public safety, health, and welfare (e.g., highways, power lines, public service) • Land and use activities contributing to increased economic activity associated with National Forest resources (e.g., oil and gas) • Land and use activities that benefit only private users (e.g., road permits, ROWs for power line telephones) • Encourage burying utility and lines, except when: <ul style="list-style-type: none"> ○ Visual Quality Objectives of the area can be met using an overhead line. ○ Burial is not feasible due to soil erosion or geological hazard or unfavorable geological conditions. ○ Greater long-term site disturbance would result. ○ It is not technically feasible or economically reasonable. 	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Issuance of SUPs on NFS lands would be allowed throughout BENM if consistent with protecting BENM objects. Consideration of SUPs would be done in coordination with the BEC.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> ○ Approve special use applications for areas adjacent to developed sites only when the proposed use is compatible with the purpose and use of the developed site. ● An application for permit may be denied if the authorizing officer determines the following: <ul style="list-style-type: none"> ○ The proposed use would be inconsistent or incompatible with the purpose(s) for which the lands are managed. ○ The proposed use would not be in the public interest. ○ The applicant is not qualified. ○ Use would be inconsistent with applicable federal and/or state law. ○ The applicant does not or cannot demonstrate technical or financial capability. <p>Undeveloped Motorized Recreational Use (UDM) and Riparian Area Management (RPN)</p> <ul style="list-style-type: none"> ● Permit special uses that are complementary and compatible with the kind and level of development within the unit. <p>Municipal Water Supply (MWS)</p> <ul style="list-style-type: none"> ● Permit only those special uses that would not impair water quality or quantity. <p>Watershed Protection/Improvement (WPE)</p> <ul style="list-style-type: none"> ● Permit special uses that are compatible with the objectives of the unit and allow appropriate motorized access. ● Structural watershed improvements damaged by surface-disturbing activities would be rehabilitated. <p>Research, Protection, and Interpretation of Lands & Resources (RPI)</p> <ul style="list-style-type: none"> ● Use SUPs or cooperative agreements as appropriate to authorize and document scientific activity. ● Permit use as appropriate for scientific and educational purposes. ● Discourage or prohibit any uses that contribute to impairment of the values for which the unit is established. ● Permit only those uses authorized by wilderness legislation, which cannot be reasonably met on non-wilderness lands. <p>Special Land Designations</p> <ul style="list-style-type: none"> ● Approve special-use applications for areas adjacent to existing special land designation units only when the proposed use is compatible with the purpose and use of the existing unit. 				

2.4.20. Recreation and Visitor Services

2.4.20.1. GOALS AND OBJECTIVES

- Manage recreation resources while protecting BENM objects, including cultural and natural resources, wildlife habitats, and vegetation, consistent with implementation-level plans identified in this plan.
- In collaboration with the BEC, provide for visitor services, including interpretation, information, and education. Emphasize and educate visitors on Leave No Trace and Visit with Respect practices for all recreation activities throughout the Monument.
- Manage recreation to protect human health and safety.
- In collaboration with the BEC, manage recreation use in a manner that supports and respects Tribal Nations' traditional uses, values, and perspectives, where practicable.

- Consistent with Traditional Indigenous Knowledge, BENM would be stewarded as a sacred place and visitors should be taught to visit the landscape in culturally appropriate ways. If not managed carefully, recreation can adversely impact or even destroy BENM objects. Agencies, in collaboration with the BEC, would carefully manage recreation uses to protect the important cultural value of this landscape for the BEC and Tribal Nations and to respect Tribal Nation traditional uses, values, and perspectives.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.20.2. MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

- Administer BLM SRPs and USDA Forest Service Recreation SUPs to conserve the identified recreation objectives, manage visitor use, protect recreational and natural resources, and provide for the health and safety of visitors while protecting BENM objects.
- Manage BENM to provide for the protection of natural quiet, where practicable.
- Agencies would collaborate and seek recommendation, guidance, and Traditional Indigenous Knowledge from the BEC. Agencies would also seek information and advice from the MAC when developing recreation area management plans (RAMPs).
- On portions of BENM managed by the USDA Forest Service, would use the Recreation Opportunity Spectrum (ROS) to manage the settings and opportunities for recreation and to guide management actions. See Appendix A, Figure 2-28, Recreation Opportunity Spectrum. See Appendix E for BLM for existing and desired physical, operational, and social recreation setting characteristics (RSCs).
- Agencies would collaborate with the BEC and county, state, and Tribal law enforcement on annual law enforcement strategies and through interim plan reviews to ensure that any management guidelines or prescriptions in this plan are followed by visitors to the Monument.
- Collaborate with the BEC when creating or updating recreational permit systems.
- Traditional Indigenous Knowledge provides that the cultural landscape of the Monument requires rest during certain seasons of the year.
- Permits would include stipulations educating users about the rules and regulations of BENM and applicable penalties and fines for permit violations.
- Existing access points, trails, and climbing routes that are consistent with the protection of BENM objects would remain available for use. If site-specific impacts exist, climbing routes can be closed and access trails and staging areas may be closed or rerouted. Any closures would be identified in collaboration with the BEC and Tribal Nations. Climbing closures would be identified in accordance with applicable law.
- Pets must be kept under control at all times. Pets are prohibited in or at any alcoves, rock writing sites, or archaeological sites. Pets must not harass or harm wildlife, stock animals, or cattle. Pets must not harass visitors or other visitors' pets. Pets are prohibited from swimming in springs and potholes. Pet waste disposal requirements would be identical to human waste disposal requirements.
- In collaboration with the BEC, during the development of implementation-level plans and RAMPs, the agencies would identify and restore unused dispersed campsites and redundant and user-created ("social") trails and routes that are impacting BENM objects.

2.4.20.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-19. Alternatives for Recreation and Visitor Services

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs</p> <p>Designate the following SRMAs and ERMAs and identify the following RMZs (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas); see Appendix I for specific recreation objectives, desired RSCs, and the management framework for each (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas):</p> <ul style="list-style-type: none"> • Indian Creek SRMA (2020 Indian Creek MMP) • Indian Creek ERMA (2020 Indian Creek MMP) • Shash Jáa SRMA: Trail of the Ancients RMZ, South Elks/Bears Ears RMZ, Arch Canyon RMZ, Arch Canyon Backcountry RMZ, McLoyd Canyon-Moon House RMZ, San Juan Hill RMZ, The Points RMZ, and Doll House RMZ (2020 Shash Jáa MMP) <p>Per 2008 Monticello RMP</p> <p>Approximately 423,678 acres are included within seven SRMAs: San Juan River (2,815 acres within Planning Area); Dark Canyon (30,810 acres); White Canyon (2,825 acres); Tank Bench (2,721 acres); Beef Basin (17,191 acres); Indian</p>	<p>Designate the following SRMAs and RMZs (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas) and manage to achieve the objectives found in Appendix E:</p> <ul style="list-style-type: none"> • Indian Creek SRMA (74,783 acres) <ul style="list-style-type: none"> ◦ Indian Creek Corridor RMZ (3,459 acres) • San Juan River SRMA (5,355 acres) <ul style="list-style-type: none"> ◦ San Juan Hill RMZ (1,717 acres) ◦ Sand Island RMZ (278 acres) • Cedar Mesa SRMA (344,628 acres) <ul style="list-style-type: none"> ◦ Cedar Mesa Backpacking RMZ (34,833 acres) • Comb Ridge RMZ (21,980 acres) • Arch Canyon RMZ (3,344 acres) • Trail of the Ancients RMZ (7,063 acres) • Moon House RMZ (318 acres) • Canyon Rims SRMA (7,413 acres) <p>Designate the following ERMAs and RMZs (Appendix A, Figure 2-30, Alternatives B and C, recreation management</p>	<p>Same as Alternative B.</p>	<p>Designate the following MAs and MZs (Appendix A, Figure 2-31, Alternative D, recreation management zones and recreation management areas) and manage to achieve the objectives found in Appendix E:</p> <ul style="list-style-type: none"> • Indian Creek MA (67,310 acres) <ul style="list-style-type: none"> ◦ Indian Creek Corridor MZ (3,459 acres) • San Juan River MA (5,350 acres) <ul style="list-style-type: none"> ◦ Sand Island MZ (278 acres) • Cedar Mesa MA (348,043 acres) • Cedar Mesa Backpacking MZ (38,177 acres) • Comb Ridge MZ (21,980 acres) • Trail of the Ancients MZ (7,063 acres) • Natural Bridges Overflow MZ (1,458 acres) • Moon House MZ (318 acres) • Canyon Rims MA (7,414 acres) • Dark Canyon MA (18,802 acres) • White Canyon MA (7,222 acres) 	<p>Landscape-level management zones would be used to manage visitation and other recreation uses in a manner that would protect BENM objects. The following management zones would be designated:</p> <ul style="list-style-type: none"> • Front Country Zone (18,995 acres): <ul style="list-style-type: none"> ◦ This zone would be the focal point for visitation and located close to communities and along major paved roads that traverse the Monument. This zone would offer day use opportunities from nearby communities via the paved travel corridors that traverse the Monument. The Front Country Zone would accommodate the primary visitation infrastructure, including parking areas, toilets, interpretation sites, overlooks, trails, and related facilities needed for existing and anticipated uses and to educate the public about the cultural history and ongoing relationship of the BEC and Tribal Nations to the Monument. Existing high visitation destinations such as Mule Canyon Kiva, Butler Wash Ruins Overlook and Trail, and the Newspaper Rock panel are included to provide for necessary improvements and to accommodate expected visitation. Lands and resources close to towns

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Creek (48,937 acres); and Cedar Mesa (326,090 acres), which includes management zones for Grand Gulch NHL (37,388 acres).</p> <p>Acres adjusted to reflect 2020 ROD/MMPs boundary adjustments.</p>	<p>zones and recreation management areas) and manage to achieve the objectives found in Appendix E:</p> <ul style="list-style-type: none"> • Dark Canyon ERMA (40,829 acres) • Dark Canyon Backpacking RMZ (18,799 acres) • White Canyon ERMA (124,827 acres) • White Canyon Canyoneering RMZ (7,222 acres) • Natural Bridges Overflow RMZ (1,458 acres) • Bicentennial Highway RMZ (4,178 acres) • Valley of the Gods ERMA (45,763 acres) • Goosenecks RMZ (96 acres) • Beef Basin ERMA (25,083 acres) • Fable Valley RMZ (7,870 acres) <p>Within the identified SRMAs, manage for 1) the primary activities to achieve the identified experiences and benefits; 2) the physical, social, and operational settings within each area and the activities that occur within them (Appendix E: Supporting Information for Recreation and Visitor Services Decisions); and 3) protecting BENM objects.</p> <p>Within the identified ERMAs, manage to maintain recreation activities, commensurate with other resources, with a focus on protecting BENM objects.</p> <p>Agencies would collaborate with the BEC in the development of RAMPs for BENM RMAs. These plans could include temporary closure of areas as necessary, including to preclude disturbance during traditional and/or ceremonial uses.</p>		<ul style="list-style-type: none"> • Valley of the Gods MA (34,389 acres) <p>Within the identified MAs, manage to maintain recreation activities, commensurate with other resources, with a focus on protecting BENM objects.</p> <p>The BLM and the BEC will coordinate to develop management plans for these areas. These plans could include temporary closure of areas as necessary, including to preclude disturbance during traditional and/or ceremonial uses.</p> <p>In the interim, existing implementation-level decisions, including but not limited to existing permit systems, allocations, group size limits, camping restrictions, fire pan requirements, fire restrictions, pet restrictions, SRP requirements, and human waste restrictions applied to the RMAs in Alternative A, including those captured in the 2008 Monticello RMP, the 2008 Moab RMP, the 2020 RMP/MMPs, the 2014 Monticello Campground Business Plan, 2017 San Juan River Business Plan, and the 2019 Cedar Mesa Business Plan, would stay in place.</p>	<p>such as Monticello, Blanding, Bluff, and Mexican Hat are included to provide for economic opportunities for local communities. The Front Country Zone would be monitored by agency staff and Tribal rangers to ensure that management prescriptions are followed.</p> <ul style="list-style-type: none"> ○ In collaboration with the BEC, existing developed recreation sites/facilities/trails would be maintained or improved and the development of new sites/facilities/trails would be allowed if consistent with the protection of BENM objects to encourage visitor stewardship, address current and expected visitor use, and provide education and interpretation. ○ The following group size limits would remain in effect until implementation-level management plans are developed for the Front Country Zone: Group size limitations of 10 OHV/mechanized vehicles, 25 individuals, or 15 pack animals. ○ Campfires would be restricted to fire rings where metal fire rings are available. In dispersed camping areas with no metal fire rings, campfires would be limited to fire pans and campfire ash should be hauled away. ○ Existing and new developed campgrounds would be allowed in Front Country Zones. New developed campgrounds would be considered in collaboration with the BEC. <ul style="list-style-type: none"> • Passage Zone (7,498 acres): ○ This zone would contain secondary travel routes used as throughways and access to limited recreation destinations. This zone would provide a less focused and developed visitor experience than the Front Country Zone due to the condition of routes and distance from communities. ○ In collaboration with the BEC, basic facilities would be provided where necessary for education, interpretation, and protection of BENM objects. Existing developed recreation sites/facilities/trails would be maintained or improved. ○ Existing and new developed campgrounds would be allowed in the Passage Zone. New developed campgrounds would be considered in collaboration with the BEC. ○ Designated routes would be re-evaluated through future implementation-level travel planning, in collaboration with the BEC. Maintained and unmaintained designated routes currently in the Passage Zone include but are not limited to the following routes: Elk Ridge Road, Upper Comb Wash Road, Comb Wash Road, Bears Ears Road, Snow Flat Road, Valley of the Gods Road, Butler Wash Road, and South Elks Road. ○ New facilities/sites/trails would be designed to be unobtrusive and meet VRM objectives to ensure they do not adversely impact the viewscape and soundscape and are culturally appropriate. ○ In collaboration with the BEC, the agencies would place educational signs and placards in recreation areas to educate the public about culturally significant plants, BENM objects, and Leave No Trace practices. ○ The following group size limits would remain in effect until implementation-level management plans are developed for the Passage Zone: Group size limitations of 10 OHV/mechanized vehicles, 25 individuals, or 15 pack animals. ○ Campfires would be limited to fire pans. Rock fire rings would be prohibited. <ul style="list-style-type: none"> • Outback Zone (265,299 acres):

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
				<ul style="list-style-type: none"> ○ This zone would provide a natural, undeveloped, and self-directed visitor experience while allowing access to trailheads and dispersed camping. Interpretive materials would be provided only when necessary for education and the protection of BENM objects. BENM objects, TCPs, wilderness areas, WSAs, and LWC that are managed to conserve wilderness characteristics would be avoided whenever possible. ○ New developed campgrounds would be prohibited in Outback Zones. Existing developed campgrounds in Outback Zones could be maintained. ○ Designated routes would be re-evaluated through future implementation-level travel planning in collaboration with the BEC. Maintained and unmaintained designated routes currently in the Outback Zone include but are not limited to the following routes: Indian Creek Corridor to Needles (paved), Bridger Jack Mesa/Beef Basin Road, Dark Canyon Plateau, Woodenshoe Road (from Glen Canyon to USDA Forest Service boundary), Deer Flat Road, Tables of the Sun, Bullet Canyon Road, Slickhorn Road, John's Canyon, Black Rock Road, River House Road, Muley Point Road, Elk Ridge Road, North Long Point Road, Kigalia Point Road, South Long Point Road, Woodenshoe Point Road, Butts Point Road, Cream Pots Road, Hammond Canyon Overlook Road, Dry Mesa Road, Causeway Road, North Cottonwood Road, Stevens Canyon, Bayles Ranch Access Road, Boy Scout Camp Access Road, and Maverick Point. ○ No new sites/facilities would be developed in the Outback Zone. Minor recreation facilities such as trails, trailhead markers, and informational kiosks would be allowed in existing recreation sites only when necessary for the protection of BENM objects. ○ Mechanized travel would be allowed on the Bluff River Trail and designated OHV routes and trails. New mechanized trails would not be allowed in the Outback Zone. ○ Campfires would be limited to fire pans. Rock fire rings would be prohibited. ● Remote Zone (1,072,587 acres): <ul style="list-style-type: none"> ○ This zone would provide a natural, undeveloped, and self-directed visitor experience with an emphasis on facilitating landscape-level protections by connecting low-elevation areas to high-elevation areas. This zone is intended to connect remote and undeveloped areas on surrounding lands managed by other federal agencies. This zone includes wilderness areas, WSAs, LWC that are managed to conserve wilderness characteristics, TCPs, LWC, other unroaded areas outside of special designations, and generally areas with a high concentration of cultural sites away from roads. ○ No new sites/facilities/trails would be developed in the Remote Zone; existing trails could be designated through implementation-level planning where consistent with protecting BENM objects. Signs would be allowed where necessary to protect BENM objects and after other management actions have been exhausted. ○ Designated routes would be re-evaluated through future implementation-level travel planning, in collaboration with the BEC. Maintained and unmaintained designated routes currently in the Remote Zone include but are not limited to the following routes: Lockhart Basin Road, North Long Point Road, Dark Canyon Plateau Road, Clay Hills Road, Collins Trailhead Road, Step/Pine Trailhead Road, Todie Flat Trailhead Road, Sheiks Canyon Trailhead Road, Government Trailhead Road, Slickhorn

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
				<p>Trailhead Road, Cigarette Springs Trailhead Road, Fish/Owl Trailhead Road, Texas Flat Road, Jacobs Chair Road, Shay Mountain, Vega Creek/North Cottonwood, Maverick Point, Davis Pocket, Ruin Canyon, Beef Basin Wash, Deadman Point, Dry Mesa, Milk Ranch Point, Indian Creek, Shay Mesa, and Reservoir Canyon.</p> <ul style="list-style-type: none"> ○ Mechanized travel would be allowed on designated OHV routes and trails. New mechanized trails would not be allowed in the Remote Zone. ○ Campfires would be limited to fire pans. Rock fire rings would be prohibited <p>In all zones, in collaboration with the BEC, the agencies would maintain, reroute, improve, repair, and/or close and rehabilitate disturbed areas including but not limited to dispersed campsites and existing routes and trails which are impacting BENM objects. The agencies would assess all non-designated routes and trails for compliance and would take all necessary compliance actions to prevent unauthorized use from occurring.</p> <p>In all zones, developed campsites are unavailable for private and/or commercial use of wood products, including on-site collection of dead wood for campfires.</p> <p>In all zones, campfire restrictions may be modified due to drought risk, fire risk, and presence of or proximity to BENM objects that could be damaged or destroyed by fire.</p> <p>In all zones, mechanized and motorized use is limited to designated routes. Designated routes would remain open and may be re-evaluated during implementation-level travel planning.</p> <p>Management plans would be developed for all zones, including recreation and interpretation plans, in order to protect BENM objects.</p> <p>In all zones, climbing on cultural sites, including structures, is prohibited.</p> <p>In all zones, management prescriptions would be altered by the agencies, in collaboration with the BEC, if necessary to protect BENM objects.</p>
<p>Per 2008 Monticello RMP Indian Creek SRMA Goals and Objectives: Monticello Approved RMP—Recreation 107 Provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values through integrated management between the BLM, NPS, State of Utah, and The Nature Conservancy. Provide for premier rock climbing experiences, outstanding OHV opportunities, scenic vistas, cultural site interpretation at Newspaper Rock, destination camping areas, and a gateway to Canyonlands National Park. By the year 2012, manage this SRMA to provide opportunities for visitors to realize personal development and growth, enhanced lifestyle increased local tourism revenue and maintenance of distinct RSCs, providing no fewer than 80% of responding visitors and impacted community residents at least a moderate realization of these benefits (i.e., 3 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization). Per 2020 ROD/MMPs Indian Creek SRMA Outcome-focused Recreation Objectives</p>	<p>Indian Creek SRMA Acres: 74,783 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas) SRMA Objective Manage the Indian Creek SRMA to protect BENM objects. Provide opportunities for climbing, camping, and cultural site visitation in a scenic red rock setting that supports appreciation of the cultural landscape and fosters an ethic of stewardship among visitors. Management actions would provide for the targeted recreation opportunities, experiences, benefits, and RSCs of the SRMA (see Appendix E: Supporting Information for Recreation and Visitor Services Decisions), provided those management actions do not conflict with the protection of BENM objects. In visitor assessments, 80% of respondents who participated in targeted activities report the ability to realize the targeted visitor experiences and benefits of the SRMA (Appendix E: Supporting Information for Recreation and Visitor Services Decisions). Camping: Camping would be restricted to designated areas/sites or developed campgrounds. New campgrounds would be developed in the Indian Creek Corridor RMZ and</p>	<p>Indian Creek SRMA Acres: 74,783 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas) SRMA Objective Objectives for the Indian Creek SRMA would be the same as Alternative B. Recreational shooting: Recreational shooting would be prohibited. The RAMP would also address permitting day and overnight use in Indian Creek. Developed recreation facilities would be limited to the Indian Creek Corridor RMZ. Existing developed recreation facilities that receive heavy use would be maintained in the Indian Creek Corridor RMZ. New sites/facilities/trails would be developed or improved if needed to protect BENM objects. Camping: Camping would require Individual Special Recreation Permits (ISRPs), and group size limitations would be imposed for dispersed camping. New campgrounds would be developed in the Indian Creek Corridor RMZ and designated dispersed camping would be identified in the SRMA in an implementation-level plan. Campfires: Same as Alternative B. Pets: Same as Alternative B.</p>	<p>Indian Creek Acres: 67,310 (Appendix A, Figure 2-31, Alternative D, management zones and management areas) MA objective: Objectives for the Indian Creek MA would be the same as Alternative C. Firearm use: Recreational shooting would be prohibited. Camping: Campsites would be designated where necessary to reduce user conflicts, to provide for public safety, and to protect BENM objects. Camping in designated sites may either be encouraged or required to meet MA goals and objectives, as identified in the RAMP. Implementation-level decisions from Alternative A and subsequent document, including the campground business plan, would be carried forward until implementation-level planning is completed. Indian Creek Corridor MZ Acres: 3,459 (Appendix A, Figure 2-31, Alternative D, management zones and management areas) Indian Creek Corridor: Objectives for the Indian Creek Corridor would be the same as under Alternative C. Recreation management decisions from Alternative A and subsequent documents including the campground business plan are included in Appendix E and would be carried forward until implementation-level planning is completed.</p>	<p>No similar action.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Provide world-class recreation opportunities while protecting the objects of BENM and supporting a growing travel and tourism economy in the region.</p> <p>Manage for the specific targeted outcomes; activities, experiences, and benefits . . . with 80% of visitors reporting realization of the targeted experiences and benefits.</p> <p>Maintain and enhance a range of RSCs, from Remote/Back Country to Rural/Front Country.</p> <p>Provide the opportunity for visitors to experience cultural resources within a directed and interpreted setting as well as an undeveloped setting to allow a sense of discovery</p> <p>Interpret the objects of BENM as described by Presidential Proclamation 9558, as re-established by Presidential Proclamation 10285: cultural resources, current cultural uses and spiritual significance of the area, geology, paleontology, native plants, wildlife, and grazing.</p> <p>Implementation-level travel planning in the SRMA would recognize the San Juan County OHV route system and integrate it, to the extent possible, in SRMA travel management and recreational goals and objectives.</p> <p>No OHV competitive events would be allowed.</p> <p>SRPs: All organized events/activities must be coordinated with the BLM. In general, for all events/activities, an SRP or letter of agreement would be required if the organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals; however, if monitoring indicates significant impacts to BENM objects, the BLM would consider adjusting group size thresholds during implementation-level planning.</p> <p>Camping: Until analyzed in an implementation-level plan, dispersed camping would be allowed following current management rules and encouraged in designated sites. A new campground called Shay Mountain Vista Campground would be constructed.</p> <p>Campfires: Campfires would be restricted to fire rings where fire rings are available. In dispersed camping areas, where fire rings would not be available, campfires would be subject to Leave No Trace standards. No campfires would be allowed in the Lavender Mesa ACEC. The area would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Campers must bring in their own wood for campfires.</p> <p>Pets: All pets must be under human control at all times. Pets would be allowed off-leash, under voice control. Pets would not be allowed in or at any alcoves, rock writing sites, or other non-developed archaeological sites. Pet use at developed archaeological sites would be as posted. Pets must not harass or harm wildlife. Pets must not harass visitors or other visitors' pets. Pets would not be allowed to swim in springs, potholes, or other natural water sources. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative.</p> <p>Human and other waste: Visitors would be required to bury human waste 4 to 6 inches deep, 200 feet from any water source, and outside of developed recreation facilities. If human waste becomes a problem, the BLM could require human waste to be packed out. All cans, trash, organic garbage, and burnable refuse, including toilet paper, must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources.</p> <p>Recreational shooting: Recreational shooting would generally be allowed but would be prohibited at</p>	<p>designated dispersed camping would be physically delineated in the SRMA in an implementation-level plan.</p> <p>Within 3 years, the BLM would develop, in collaboration with the BEC, an Indian Creek RAMP to provide management direction for the SRMA, including group size limits, facilities development, and designation of campsites. Until the RAMP is developed, existing group size camping limitation would remain in place.</p> <p>Developed recreation facilities would be concentrated in the Indian Creek Corridor RMZ and allowed throughout the SRMA. Existing developed recreation facilities would be maintained. New sites/facilities/trails would be developed or expanded as necessary in response to user demand consistent with protecting BENM objects.</p> <p>Campfires: Campfires would be restricted to fire rings where metal fire rings are available. In dispersed camping areas with no metal fire rings, campfires would be limited to fire pans, and campfire ash should be hauled away; stone fire rings would not be allowed unless consistent with the protection of BENM objects as determined during implementation-level planning. No campfires would be allowed in the Lavender Mesa ACEC. The area would be unavailable for private and/or commercial use of wood products, including on-site collection of dead wood for campfires. Campers must bring in their own wood for campfires.</p> <p>Pets: All pets must be leashed at all times.</p> <p>Human and other waste: Visitors would be required to use existing bathroom facilities or pack out solid human waste and dispose of it at appropriate facilities. All cans, trash, organic garbage, and burnable refuse, including toilet paper, must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources.</p> <p>Climbing: Access points, trails, and climbing routes that are consistent with the protection of BENM objects would continue to be allowed. The BLM could do any of the following:</p> <ul style="list-style-type: none"> • Use physical infrastructure to educate climbers at climbing access points on potential climbing impacts and how to recreate responsibly and/or self-regulate to avoid impacting these resources. • Work with climbing organizations and SRP holders to increase volunteer monitoring and to educate climbers. If site-specific impacts exist, climbing routes can be closed and access trails and staging areas may be rerouted. Any closures would be identified in collaboration with the BEC and Tribal Nations. Climbing closures would be identified via physical infrastructure and/or kiosks/signs. • All new bolts, anchors, or fixed gear for new routes would require prior approval by the BLM. Bolts, anchors, and fixed gear on existing open routes could be replaced as needed without prior authorization. All bolts, anchors, and fixed gear would be painted to limit visual contrast. • Seasonal Climbing Closures: Climbing routes would be closed seasonally as appropriate to protect nesting raptors, to provide for natural resource rest, and/or to support traditional uses. Closures would be identified in collaboration with the BEC and Tribal Nations. <p>Indian Creek Corridor RMZ</p> <p>RMZ Objective: Manage the Indian Creek Corridor RMZ for a frontcountry physical and social recreation setting. Use existing and new visitor facilities and Public Use (Developed)</p>	<p>Human and other waste: Same as Alternative B.</p> <p>Climbing: ISRPs would be required for all climbing activities and group size limits would be imposed. Access points, trails, and climbing routes that are consistent with the protection of BENM objects would continue to be allowed. The BLM could do any of the following:</p> <ul style="list-style-type: none"> • Use permits to educate climbers on potential climbing impacts and how to recreate responsibly and/or self-regulate to avoid impacting these resources. • Work with climbing organizations and SRP holders to increase volunteer monitoring and to educate climbers. • Climbing restrictions would primarily be managed via permits. • If site-specific impacts exist, climbing routes would be closed and access trails and staging areas may be rerouted. Any closures would be identified in collaboration with the BEC and Tribal Nations. Climbing closures would be identified via physical infrastructure and/or kiosks/signs. • All new bolts, anchors, or fixed gear for new routes would require prior approval by the BLM. Bolts, anchors, and fixed gear on existing open routes could be replaced as needed without prior authorization. All bolts, anchors, and fixed gear would be painted to limit visual contrast. <p>Seasonal Climbing Closures: Same as Alternative B.</p> <p>Indian Creek Corridor RMZ</p> <p>Same as Alternative B.</p>		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>campgrounds/developed recreation sites, rock writing sites, and structural cultural sites. Where problem areas occur regarding recreational shooting, the BLM would post signs notifying visitors of restrictions and would consider implementing supplemental rules.</p> <p>Climbing: All access points, trails, and climbing routes would continue to be open. However, if monitoring information indicates site-specific impacts, the BLM can do any of the following:</p> <ul style="list-style-type: none"> Educate climbers on potential climbing impacts and how to "tread lightly" and/or self-regulate to avoid impacting these resources. Work with climbing organizations and SRP holders to increase volunteer monitoring and to educate climbers. If site-specific impacts exist, close or reroute access points, trails, and climbing routes. <p>Per 2008 Monticello RMP REC-125</p> <p>The 1991 Canyon Basins SRMA is dissolved and three new SRMAs are created: the Indian Creek SRMA, the Dark Canyon SRMA, and the Beef Basin SRMA.</p> <p>Management prescriptions for the Indian Creek SRMA. REC-127</p> <p>Indian Creek SRMA (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas) matches the boundary of the Indian Creek Corridor Plan (EA UT – 090-00-47, 2005) (BLM 2005b) and includes all of the Indian Creek WSAs and Indian Creek ACECs. WSAs are managed under the IMP and ACECs and remaining areas would be managed in accordance with the management prescriptions outlined below.</p> <p>REC-128</p> <p>Indian Creek SRMA boundary matches the boundary for the Indian Creek Corridor Plan (EA UT-090-00-47) (BLM 2005b). Management of the Indian Creek Corridor would be in conformance with the decisions outlined in the Indian Creek Corridor Plan, which includes the following guidelines:</p> <ul style="list-style-type: none"> The area is unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Campers must bring in their own wood for campfires. Campfires are restricted to fire rings where fire rings are available. In dispersed camping areas, where fire rings are not available, campfires are subject to Leave No Trace standards. Rock climbing routes in conflict with cultural sites would be closed. Camping fees would be charged if deemed necessary to provide needed facilities and services. Parking areas would be developed. Additional camping stipulations and regulations could be implemented if monitoring data shows this is necessary. If new climbing routes are established, the BLM may designate a footpath to access the base of the climb to protect wildlife/raptors. <p>REC-129</p> <p>Dispersed camping is allowed in the Indian Creek Corridor, except within the established designated camping zones: Indian Creek Falls and Creek Pasture. Camping within these zones is limited to designated sites.</p>	<p>sites to interpret the cultural importance of the Indian Creek area to a broad audience and support protection of the overall cultural landscape through an ethic of stewardship. Use accessible visitor facilities at trailheads and major visitor access areas to communicate recreation use rules, regulations, and ethics to visitors.</p> <ul style="list-style-type: none"> RMZ would be managed primarily as a place to educate visitors about appropriate etiquette at cultural sites. Campgrounds would be developed in the RMZ. Recreational shooting would be prohibited. <p>New developed recreation facilities would be allowed. Existing recreation facilities would be maintained to protect BENM objects, educate the public, and minimize impacts to the existing landscape from the Indian Creek Corridor Scenic Byway.</p>			

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>REC-130</p> <p>Where dispersed vehicle camping is allowed, it is restricted to previously disturbed areas within 150 feet of designated routes</p>				
<p>Per 2020 ROD/MMPs Shash Jáa SRMA</p> <p>Outcome-focused Recreation Objectives</p> <p>The following objectives apply to all alternatives analyzed in the RMP/EIS:</p> <ul style="list-style-type: none"> • Provide world-class recreation opportunities while protecting the objects of BENM and supporting a growing travel and tourism economy in the region. • Manage for the specific targeted outcomes—activities, experiences, and benefits . . . with 80% of visitors reporting realization of targeted experiences and benefits. • Maintain and enhance a range of RSCs, from Remote/Back Country to Rural/Front Country. • Provide the opportunity for visitors to experience cultural resources within both a directed and interpreted setting as well as an undeveloped setting to allow a sense of discovery. • Interpret the objects of BENM as described by Presidential Proclamation 9558, as re-established by Presidential Proclamation 10285: cultural resources, current cultural uses and the spiritual significance of the area, geology, paleontology, native plants, wildlife, and grazing. • Manage recreation...as consistently and compatibly as possible between the agencies to provide a mostly seamless visitor experience. <p>Decisions apply to all areas within the SRMA except where superseded by specific RMZ and WSA decisions. The following decisions apply to the entire Shash Jáa SRMA:</p> <ul style="list-style-type: none"> • Existing developed recreation sites would be maintained. New sites/facilities/trails would be developed in response to user demand consistent with protecting BENM objects. • No new OHV or mechanized trails would be developed on the Comb Ridge formation west of Butler Wash. • ISRPs for private and commercial Special Area use would be required following current Federal Lands Recreation Enhancement Modernization Act authority and BLM permit and fee administration policy. ISRPs would be required for the Moon House site, Mule Canyon WSA (in canyon), Butler Wash hiking, and Lower Fish Creek. <p>All access points, trails, and climbing routes would continue to be open. However, if monitoring information indicates site-specific impacts, the agencies can do any of the following:</p> <ul style="list-style-type: none"> • Educate climbers on potential climbing impacts and how to “tread lightly” and/or self-regulate to avoid impacting these resources. • Work with climbing organizations and SRP/SUP holders to increase volunteer monitoring and to educate climbers. • If site-specific impacts exist, close or reroute access points, trails, and climbing routes. <p>Pets: All pets must be under human control at all times. Pets would be allowed off-leash, under voice control. Pets would not be allowed in or at any alcoves, rock writing sites, or other non-developed archaeological sites. Pet use at developed archaeological sites would be as posted. Pets must not harass or harm wildlife. Pets must not harass visitors or other visitors’ pets. Pets would not be allowed to</p>	<p>Shash Jáa is incorporated into Cedar Mesa ERMA/SRMA and San Juan River ERMA/SRMA, below.</p>	<p>Shash Jáa is incorporated into Cedar Mesa ERMA/SRMA and San Juan River ERMA/SRMA, below.</p>	<p>Shash Jáa is incorporated into Cedar Mesa MA and San Juan River MA, below.</p>	<p>Not carried forward (Shash Jáa RMA).</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>swim in springs, potholes, or other natural water sources. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative.</p> <p>Human and other waste: Visitors would be required to bury human waste 4 to 6 inches deep, 200 feet from any water source, and outside of developed recreation facilities. If human waste becomes a problem, the BLM could require human waste to be packed out. All cans, trash, organic garbage, and burnable refuse, including toilet paper, must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources.</p> <p>Recreational shooting: Recreational shooting would generally be allowed but would be prohibited at campgrounds/developed recreation sites, rock writing sites, and structural cultural sites. Where problem areas occur regarding recreational shooting, the agencies would post signs notifying visitors of restrictions and would consider implementing supplemental rules.</p> <p>Until an implementation-level camping plan is completed, dispersed vehicle camping in the Shash Jáa Unit (including when allowed in RMZs) would be allowed only in previously disturbed areas within 150 feet of designated routes (on each side of a centerline). If monitoring indicates impacts to BENM objects, the agencies would consider closing and restoring impacted areas in accordance with applicable laws and policies. This use would not include areas within WSAs, ACECs, or T&E or special status species habitats. Future implementation-level planning would consider additional camping designations and limitations.</p> <p>Until an implementation-level RAMP/business plan is completed for NFS lands, dispersed camping would be allowed within 150 feet of a designated travel route, as reflected in the 1991 Manti-La Sal National Forest TMP /Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map.</p>				
<p>Per 2008 Monticello RMP</p> <p>Cedar Mesa SRMA</p> <p>Goals and Objectives</p> <p>Provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values through integrated management between the BLM and NPS. Provide a safe, natural, well-designed, accessible recreational experience for all visitors to enjoy the world-renowned cultural resources and scenic values. Use visitor information and interpretation as a primary tool to protect sensitive resources, discourage vandalism, and encourage visitor appreciation of public lands.</p> <p>By the year 2012, manage this SRMA to provide opportunities for visitors to realize personal development and growth, enhanced lifestyle increased local tourism revenue and maintenance of distinct RSCs, providing no fewer than 80% of responding visitors and impacted community residents at least a moderate realization of these benefits (i.e., 3 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).</p> <p>Portions of the Cedar Mesa SRMA overlay four existing WSAs (Grand Gulch Instant Study Area (ISA) Complex, Fish Creek Canyon, Mule Canyon, and Road Canyon) and the Valley of the Gods ACEC (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas). WSAs would be managed according to the IMP and the Valley of the Gods ACEC would be managed as VRM Class I, unavailable for private and commercial use of</p>	<p>Cedar Mesa SRMA</p> <p>Acres: 344,628 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>SRMA Objective</p> <p>Manage the Cedar Mesa SRMA to protect BENM objects. Provide opportunities for cultural site visitation, hiking, backpacking, camping, and scenic driving that enhance the visitors' appreciation of the cultural landscape across BENM and foster an ethic of stewardship.</p> <p>In visitor assessments, 80% of respondents who participated in targeted activities report the ability to realize the targeted visitor experiences and benefits of the SRMA (Appendix E: Supporting Information for Recreation and Visitor Services Decisions).</p> <p>Interpretive Plan</p> <ul style="list-style-type: none"> The BLM would work with the BEC to develop an interpretive plan specific to the Cedar Mesa area. The plan would identify themes and stories that Tribal Nations want to convey to visitors but would heavily focus on information regarding cultural and natural resources protection. The plan would also identify methods (signs, printed materials, audio-visual methods) appropriate for each RMZ. Physical infrastructure to support interpretation would be emphasized under this alternative. 	<p>Cedar Mesa SRMA</p> <p>Acres: 344,628 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>SRMA Objective</p> <p>Same as Alternative B.</p> <p>Interpretive Plan</p> <ul style="list-style-type: none"> Same as Alternative B except physical infrastructure would be mostly limited to the Trail of the Ancients RMZ. Emphasis for interpretation and education would be via permits and off-site means. <p>RAMP</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Group Size</p> <ul style="list-style-type: none"> Maximum group size limits for each area applied to all private and commercial trips to protect BENM objects. Every 3 years, the BLM, in collaboration with the BEC, would review visitor impacts to cultural resources and adjust group size limits accordingly. The group size limit and allocations in Alternative A would remain in effect until superseded by the Cedar Mesa RAMP or other future implementation-level planning. <p>Camping</p> <ul style="list-style-type: none"> Camping would require ISRPs and group size limitations would be imposed for dispersed camping. New 	<p>Cedar Mesa MA</p> <p>Acres: 325,438 (Appendix A, Figure 2-31, Alternative D, management zones and management areas)</p> <p>MA Objective</p> <p>Same as Alternative B.</p> <p>Camping</p> <ul style="list-style-type: none"> Campsites would be designated where necessary to reduce user conflicts, to provide for public safety, and to protect BENM objects. Camping in designated sites may either be encouraged or required to meet MA goals and objectives, as identified in the RAMP. <p>Recreation management decisions from Alternative A and subsequent documents including the Cedar Mesa Business Plan are included in Appendix E and would be carried forward until implementation-level planning is completed.</p> <p>Trail of the Ancients</p> <p>Zone Objective</p> <p>Same as Alternative B.</p> <p>Recreation management decisions from Alternative A and subsequent documents including the Cedar Mesa Business Plan are included in Appendix E and would be carried forward until implementation-level planning is completed.</p> <p>Comb Ridge</p> <p>Zone Objectives</p> <p>Same as Alternative B.</p>	<p>No similar action.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>woodland products, campfires are not allowed, among other restrictions (see the Valley of the Gods ACEC section under Special Designations).</p> <p>A joint recreation/cultural RMP would be written for this area based on the [2008] RMP.</p> <p>The Cedar Mesa SRMA (407,098 acres) (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas), formerly the Grand Gulch SRMA, includes three RMZs focused on more intense recreational use; Grand Gulch NHD RMZ (37,388). More specific or restrictive management is outlined under these three management zones and presented below. Generally, this SRMA is managed according to the following prescriptions:</p> <ul style="list-style-type: none"> • Where livestock grazing is permitted mitigation activities may be implemented if cultural resources are determined to be at risk. • Available for watershed, range, and wildlife improvements and vegetation treatments. • Campfires allowed on mesa tops only; a fire pan required. • Available for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Access to available areas would be limited to designated roads and trails, dependent on Class III cultural resource surveys and occur outside WSAs and canyon bottoms. Traditional cultural use by Native Americans of woodland products is allowed as long as other resource values are not adversely affected. • Open to dispersed camping except in areas where cultural resources are at risk. • Managed as VRM Classes II, III, and IV outside of WSAs and the Valley of the Gods ACEC, which are managed as VRM Class I. • Pets and Stock <ul style="list-style-type: none"> ○ If resources or visitors' experiences are adversely impacted, pets and/or stock animals may be limited or prohibited in canyons requiring permits. ○ No unauthorized use of existing corrals. ○ Areas for Day Stock Use Only <ul style="list-style-type: none"> ▪ Bullet Canyon from Grand Gulch to Jailhouse Ruin. Two miles upstream Fish Canyon from the confluence with Owl Canyon, McLoyd Canyon to impassable pour-off, and Owl Canyon to Nevill's Arch. • Pets <ul style="list-style-type: none"> ○ No limit or fees for pets. All pets must be collared, leashed, and under human control at all times. No pets are allowed in Slickhorn Canyon or below Collins Canyon in Grand Gulch. Pets are not allowed in or at any alcoves, rock art sites, or ruins. Pets must not harass or harm wildlife. Pets must not harass visitors and other visitors' pets. Pets are not allowed to swim in springs, potholes, or other natural water sources. Pet waste must be buried in a shallow hole away from trails, campsites, cultural sites, and natural water sources. • Stock (e.g., horses, llamas, goats) <ul style="list-style-type: none"> ○ All commercial and private stock use requires a permit. Within the Grand Gulch NHD one stock trip at any one time would be allowed in the area, including day use. Other Cedar Mesa canyons allow one overnight stock trip at any one time, and unlimited day use. • Overnight Stock Use Areas <ul style="list-style-type: none"> ○ Kane Gulch, Collins Canyon, Government Trail, Grand Gulch from Kane Gulch to Collins Canyon, Fish Creek 	<p>Within 3 years, the BLM would work with the BEC to develop a Cedar Mesa RAMP to provide management direction for the SRMA, including permit allocations, group size limits, and designation of campsites. Until the RAMP is developed, existing permit allocations and camping limitation would remain in place.</p> <p>Group Size</p> <ul style="list-style-type: none"> • Maximum group size limits for each area would be applied to all private and commercial trips to protect BENM objects and achieve the desired RSCs of the SRMA. The group size limit and allocations in Alternative A would remain in effect until superseded by the Cedar Mesa RAMP or other future implementation-level planning. <p>Camping</p> <ul style="list-style-type: none"> • New campgrounds would be developed in the Trail of the Ancients RMZ. Designated dispersed camping would be physically delineated in the rest of the SRMA in an implementation-level plan and would be to designated campsites along designated routes. <p>Campfires</p> <ul style="list-style-type: none"> • Campfires would be restricted to fire rings where metal fire rings are available. In dispersed camping areas with no metal fire rings, campfires would be limited to fire pans, and campfire ash should be hauled away; stone fire rings would not be allowed unless consistent with the protection of BENM objects as determined during implementation-level planning. <p>Human and Other Waste</p> <ul style="list-style-type: none"> • The requirement on visitors to remove solid waste would be made during implementation-level planning consistent with the protection of BENM objects. <p>Developed Recreation Facilities</p> <ul style="list-style-type: none"> • Developed recreation facilities would be concentrated in the Trail of the Ancients RMZ and allowed in the Comb Ridge RMZ. Existing developed recreation facilities would be maintained. Where consistent with protecting BENM objects, new sites, facilities, and trails would be developed or expanded as necessary in response to user demand. <p>Trail of the Ancients RMZ</p> <ul style="list-style-type: none"> • RMZ Objective: Manage the Trail of the Ancients RMZ for a frontcountry physical and social recreation setting, which uses existing and new developed visitor facilities and interpreted Public Use (Developed) sites to communicate the cultural importance of the Cedar Mesa area to a broad audience. Use accessible visitor facilities at trailheads and major visitor access areas to instill an ethic of stewardship by communicating recreation use rules, regulations, and ethics to visitors. • RMZ would be managed primarily as a place to educate visitors about appropriate etiquette at cultural sites. • Campgrounds would be developed in the RMZ. • New developed recreation facilities would be allowed. Existing recreation facilities would be maintained to protect BENM objects; educate the public; and minimize impacts to the existing landscape from the Trail of the Ancients Scenic Byway. <p>Comb Ridge RMZ</p> <ul style="list-style-type: none"> • RMZ Objective: Manage the Comb Ridge RMZ to protect BENM objects while providing opportunities for cultural site visitation. Maintain and enhance a predominantly backcountry physical and social recreation setting where minimal visitor facilities may be developed only when 	<p>campgrounds could be developed in the Trail of the Ancients RMZ.</p> <p>Campfires</p> <ul style="list-style-type: none"> • Same as Alternative B. <p>Human and Other Waste</p> <ul style="list-style-type: none"> • Visitors would be required to use existing bathroom facilities or pack out solid human waste and dispose of it at appropriate facilities. All cans, trash, organic garbage, and burnable refuse, including toilet paper, must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources. <p>Developed Recreation Facilities</p> <ul style="list-style-type: none"> • Existing and new developed recreation facilities would be developed and maintained in the Trail of the Ancients RMZ. New sites/facilities/trails would be developed or improved outside of the Trail of the Ancients RMZ only if needed to protect BENM objects. <p>Trail of the Ancients RMZ</p> <ul style="list-style-type: none"> • Same as Alternative B. <p>Comb Ridge RMZ</p> <p>Objectives: Same as Alternative B</p> <ul style="list-style-type: none"> • Management Actions: Same as Alternative B with the following exceptions: • Sites along Butler Wash Road would not be developed unless necessary to protect BENM objects. • Dispersed campsites would be designated, and camping would be limited to designated campsites, with designated access routes and parking. In camp areas without toilets, solid human waste must be packed out and disposed of at appropriate facilities. The camping limitations in Alternative A would remain in effect until superseded by the Cedar Mesa RAMP or other future implementation-level planning. • All pets must be leashed at all times. <p>Cedar Mesa Canyons RMZ</p> <p>RMZ Objective: Manage the Cedar Mesa Canyons RMZ to protect BENM objects while providing opportunities for backpacking, hiking, and cultural site visitation experiences. Use the existing Cedar Mesa permit system to convey important rules, regulations, and ethics to visitors and off-site interpretive materials to instill a sense of stewardship. Visitor facilities would be restricted to trailheads and access points located outside of WSAs, on the boundaries of the RMZ.</p> <p>Permits</p> <ul style="list-style-type: none"> • Overnight and day use in the following canyons requires an ISRP: <ul style="list-style-type: none"> ○ Grand Gulch and its tributaries ○ Fish and Owl Canyons ○ Road Canyon ○ Lime Creek ○ Mule Canyons ○ Slickhorn Canyon • Overnight permits are allocated and would be issued to users through a permit reservation system. A maximum group size limit is applied to all private and commercial trips to protect BENM objects and achieve the desired RSCs of the SRMA. Every 3 years, the BLM, in collaboration 	<p>Camping: Camping would be managed the same as Alternative A until an implementation-level camping plan is developed.</p> <p>Recreation management decisions from Alternative A and subsequent documents including the Cedar Mesa Business Plan are included in Appendix E and would be carried forward until implementation-level planning is completed.</p> <p>Cedar Mesa Canyons (includes Arch Canyon)</p> <p>Zone Objective</p> <p>Same as Alternative C.</p> <p>OHV closed (including Arch Canyon).</p> <p>Recreation management decisions from Alternative A and subsequent documents including the Cedar Mesa Business Plan are included in Appendix E and would be carried forward until implementation-level planning is completed.</p>	

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Canyon from Comb Wash to confluence with Owl Canyon, Mule Canyon South of U-95, Road Canyon, Lime Creek Canyon, John's Canyon, and Arch Canyon.</p> <ul style="list-style-type: none"> • Areas Closed to Stock Use <ul style="list-style-type: none"> ○ Grand Gulch below Collins Canyon, all the Slickhorn Canyons, Mule Canyons north of U-95, Bullet Canyon above Jailhouse Ruin, Fish Creek Canyon from 2 miles upstream from Fish Creek and Owl Creek confluence, and Owl Canyon above Nevill's Arch. • Use Limitations <ul style="list-style-type: none"> ○ Stock use, both day and overnight, is subject to the provisions of the Grand Gulch Plateau Cultural and Recreation Management Plan, which allows for no more than one overnight stock party at a time in any canyon on Cedar Mesa. However, Grand Gulch is limited to only one stock trip at any time, day or overnight. Stock day use would be limited to one party per day per trailhead in all canyons requiring permits (except Grand Gulch and McLoyd). The BLM would monitor day use and reserves the right to implement a day-use allocation and reservation system at a future date if the impacts of day-use visitation warrant. • Group Size <ul style="list-style-type: none"> ○ Overnight and day use in the Grand Gulch Primitive area and other Cedar Mesa canyons is restricted to 12 individuals and eight animals (pack and/or saddle). • Feed <ul style="list-style-type: none"> ○ Stock users are required to take all feed (non-germinating, certified weed free) necessary to sustain their animals while on the trip. <p>Per 2008 Monticello RMP</p> <p>Loose Herding</p> <ul style="list-style-type: none"> • Loose herding of pack and saddle stock is prohibited. All stock must be under physical control. When tethered, all stock must be at least 200 feet away from any water source and archaeological sites and their surrounding benches. <p>No New Trails</p> <ul style="list-style-type: none"> • In permitted canyons, no new trails would be established for stock use. Use is restricted to existing trails and routes in areas open to recreational stock use. <p>Mesa Top Camping</p> <ul style="list-style-type: none"> • Vehicle camping is limited along designated routes to designated campsites. • Designated campsites for large groups (20 to 24 people). • Group size is limited to 24 people for both private and commercial use. • Closure of campsites impacting cultural sites. • Fourteen-day camping limit within any 28 consecutive days, with the options of reducing the number of days or closing campsites if impacts occur. <p>In-Canyon Private/Commercial Day Use</p> <ul style="list-style-type: none"> • Private <ul style="list-style-type: none"> ○ Limit of 12 people per day per trailhead. ○ Group size limited to 12. ○ A limited day use permit system would be implemented as necessary to protect cultural and other resources. • Commercial <ul style="list-style-type: none"> ○ Group size limited to 12. ○ One commercial group per day per trailhead. 	<p>necessary for the protection of BENM objects. Exceptions would be middle country physical settings at selected trails and cultural sites that would be used to educate visitors about proper site visitation etiquette to mitigate impacts from visitation throughout the rest of the area. Recreation use rules, regulations, and ethics would be clearly posted on-site and at major access points.</p> <ul style="list-style-type: none"> • Dispersed campsites would be designated, and camping would be limited to designated campsites, with designated access routes and parking. In camp areas without toilets, solid human waste must be packed out and disposed of at appropriate facilities. The camping limitations in Alternative A would remain in effect until superseded by the Cedar Mesa RAMP or other future implementation-level planning. • In collaboration with the BEC, appropriate sites along Butler Wash Road would be identified for development at public use cultural sites. Trails from parking areas to public use cultural sites would be designated and signed, and the sites would be hardened or otherwise made visitor-ready. • Day use hiking on Comb Ridge requires an ISRP. If monitoring indicates damage to BENM objects, the BLM would provide for visitor management infrastructure and education. If those actions are not effective, day use must be allocated. • Parking for day use is limited to designated trailheads. • No new OHV or mechanized trails would be developed on the Comb Ridge formation west of Butler Wash. • Pets: All pets must be under voice control. <p>Cedar Mesa Canyons RMZ</p> <p>RMZ Objective: Manage the Cedar Mesa Canyons RMZ to protect BENM objects while providing opportunities for backpacking, hiking, and cultural site visitation experiences. Use the existing Cedar Mesa permit system to convey important rules, regulations, and ethics to visitors.</p> <p>Most visitor facilities would be restricted to trailheads and access points located outside of WSAs, on the boundaries of the RMZ. Minimal visitor facilities may be developed inside the RMZ only compatible with WSA policy and when necessary for the protection of BENM objects.</p> <p>Permits</p> <ul style="list-style-type: none"> • Overnight and day use in the following canyons requires an ISRP: <ul style="list-style-type: none"> ○ Grand Gulch and its tributaries ○ Fish and Owl Canyons ○ Road Canyon ○ Lime Creek ○ Mule Canyons ○ Slickhorn Canyon • Overnight permits are allocated and would be issued to users through a permit reservation system. A maximum group size limit is applied to all private and commercial trips to protect BENM objects and achieve the desired RSCs of the SRMA. The group size limit in Alternative A would remain in effect until superseded by the Cedar Mesa RAMP or other future implementation-level planning. • If monitoring indicates damage to BENM objects, the BLM would provide for visitor management infrastructure and education. If those actions are not effective, day use must be allocated. <p>In-Canyon Overnight Camping</p>	<p>with the BEC, would review visitor impacts to cultural resources and adjust group size limits accordingly. The group size limit in Alternative A would remain in effect until superseded by the Cedar Mesa RAMP or other future implementation-level planning.</p> <ul style="list-style-type: none"> • Day use may be allocated if monitoring indicates damage to BENM objects. If this is implemented, commercial and private use allocations would be adaptive and determined based on the relative visitor demand for self-supported (private) and guided (commercial) recreation opportunities, and preceding actual use trends. Allocations would sustain the viability of both types of visitor opportunities. <p>In-Canyon Overnight Camping</p> <ul style="list-style-type: none"> • In-canyon camping could be limited to certain designated areas if resource damage occurs. • All cans, trash, organic garbage, and burnable refuse, including toilet paper, must be carried out. Liquid garbage may be discarded 200 feet away from water sources. Dishwater must be strained and discarded 200 feet from camps, trails, and water sources. • No swimming or bathing is allowed in the pools. • If solid human waste becomes a problem, a requirement to carry out waste and dispose of it at appropriate facilities may be required. • No campfires in canyons. • If drought conditions are impacting wildlife, overnight users would be notified that they must pack all water for their trip (no pumping from water sources on BENM). <p>Pets</p> <ul style="list-style-type: none"> • Same as Alternative B. <p>Stock Use</p> <ul style="list-style-type: none"> • Same as Alternative B. 		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> ○ Implement additional restrictions on group size and visitor frequency (based on monitoring of impact) as necessary to protect cultural or other resources. ○ Advanced permit required through Monticello PA. <p>In-Canyon Overnight Camping</p> <ul style="list-style-type: none"> ● Pack it in, pack it out. All cans, trash, organic garbage, and burnable refuse, including toilet paper, must be carried out. Liquid garbage may be discarded 200 feet away from water sources. Dishwater must be strained and discarded 200 feet from camps, trails, and water sources. ● No swimming or bathing is allowed in the pools. ● Commercial allocation is 30% of the Cedar Mesa permitted use. ● Designated campsites for large groups of 8 to 12 people, and for groups with stock animals. ● Groups of one to seven people would not have designated campsites and would camp in dispersed campsites. ● In-canyon camping could be limited to certain designated areas if resource or cultural damage occurs. ● If human waste becomes a problem, a requirement to carry out waste may be implemented. ● Total caps on visitor numbers for each trailhead are shown below. Caps on visitor numbers or group size may be modified as necessary to protect resources. <p>Private</p> <ul style="list-style-type: none"> ● Private group size is limited to eight people per day per trailhead for overnight trips. <p>Commercial</p> <ul style="list-style-type: none"> ● Commercial group size is limited to 12 people per day per trailhead. ● One commercial group per trailhead per day. ● Commercial guides are required to meet all pertinent state guidelines. <p>Trailhead Allocations</p> <ul style="list-style-type: none"> ● Total overnight visitors per day: <ul style="list-style-type: none"> ○ Kane 20 ○ Bullet 20 ○ Government 20 ○ Collins 20 ○ Fish/Owl 20 ○ Road Canyon 20 ○ Lime Creek 20 ○ Mule Canyons 20 ○ Slickhorn Canyons 20 ● If commercial cap limits are not met on a given day, additional private visitors would be allowed provided the overall cap of 20 people per trailhead is not exceeded. <p>Cedar Mesa SRMA Grand Gulch NHD RMZ</p> <p>This area is an RMZ within the SRMA due to its high level of backcountry use and the potential to impact the high-density world-renowned cultural resources in this area. Restrictions and management prescriptions are intended to minimize conflict between this use and cultural resources. The following management prescriptions apply in this RMZ:</p> <ul style="list-style-type: none"> ● Grand Gulch NHD is within a WSA and is managed under the IMP. 	<ul style="list-style-type: none"> ● Campsites would be designated, and all overnight visitors would be encouraged to use these designated sites. ● All cans, trash, organic garbage, and burnable refuse, including toilet paper, must be carried out. Liquid garbage may be discarded 200 feet away from water sources. Dishwater must be strained and discarded 200 feet from camps, trails, and water sources. ● No swimming or bathing is allowed in the pools. ● Solid human waste must be packed out and disposed of at appropriate facilities. ● No campfires in canyons. ● If drought conditions are impacting wildlife, overnight trips would not be permitted. <p>Pets</p> <ul style="list-style-type: none"> ● No pets allowed within this RMZ. <p>Stock Use</p> <ul style="list-style-type: none"> ● Stock users are required to take all feed (non-germinating, certified weed-free) necessary to sustain their animals while on the trip. ● Loose herding of pack and saddle stock is prohibited. All stock must be under physical control. When tethered, all stock must be at least 200 feet away from any water source and archaeological sites. 			

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>In addition to the management prescriptions described above for the Cedar Mesa SRMA, the Grand Gulch NHD (37,388 acres) is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • Unavailable for geophysical activities. • Unavailable for private and/or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Campfires limited to mesa tops only (no campfires in the canyon). • Available for livestock grazing, except Grand Gulch Canyon and associated tributaries, below Kane Gulch fence to the confluence with the San Juan River (approximately 16,316 acres). • Closed to OHV use. • Designate trails and camping areas as necessary to protect cultural resources. • If cultural or natural resources or the visitors' experiences are impacted, pets and/or stock animals may be limited or prohibited in canyons requiring permits. • Non-motorized habitat improvements, watershed improvements, vegetation treatments, including aerial seeding, hand reseeding, planting seedlings, and control of invasive non-native species, are allowed as long as they would not impact cultural resources based on a site-specific analysis and are consistent with the IMP. • Limitations on numbers of trips may be implemented if cultural resources are impacted. 				
<p>Per 2020 ROD/MMPs Arch Canyon RMZ</p> <ul style="list-style-type: none"> • SRPs: Non-motorized competitive events would be allowed with spectators limited to areas that have been cleared for cultural and paleontological resources unless monitoring shows adverse impacts to Monument objects and values. • Vending would not be allowed. • All organized events/activities must coordinate with the BLM. In general, for all events/activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. However, if monitoring indicates significant impacts to Monument objects and values, the BLM would consider adjusting group size thresholds during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment. • A maximum of six motorized commercial or organized events would be permitted between March and May on non-consecutive weekends. • OHV and mechanized casual use would be allowed on BLM-administered lands. NFS lands would be closed to motorized and mechanized use. • Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites. • Campfires would be allowed except in archaeological sites. 	<p>Arch Canyon RMZ (BLM-administered lands within Cedar Mesa SRMA) Arch Canyon RMZ RMZ Objective: Manage the Arch Canyon RMZ to protect BENM objects while providing opportunities for scenic OHV driving, cultural site visitation, and hiking experiences. Maintain or enhance backcountry recreation settings. Use visitor facilities at trailheads and major visitor access areas to communicate recreation use rules, regulations, and ethics to visitors. OHV limited To protect Mexican spotted owl habitat, the BLM would develop a turnaround point no closer than 0.5 mile before the national forest boundary. All OHVs would be required to turn around at this point between March 1 and August 31. Signage would also be utilized in this area at the turnaround. Camping would be allowed only in designated camping areas. No more than six motorized commercial, organized, or competitive events would be permitted between March and May. The events could not be on consecutive weekends.</p>	<p>Arch Canyon RMZ (BLM-administered lands within Cedar Mesa SRMA) Arch Canyon RMZ Same as Alternative B except:</p> <ul style="list-style-type: none"> • Camping would be allowed only in designated camping areas. Designated dispersed camping would not be allowed in Mexican spotted owl Protected Activity Centers from March 1 to August 31. • An ISRP would be required for all motorized travel in the Arch Canyon RMZ. Use may be allocated if needed to protect BENM objects. Motorized use would be prohibited seasonally from March 1 to August 31 for the last 0.5 mile before the national forest boundary. • The number of commercial, organized, or competitive events permitted from March through May would be determined on a case-by-case basis. 	<p>Arch Canyon MZ not carried forward. Managed as part of the Cedar Mesa Canyons Zone</p>	<p>No similar management.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> A seasonal OHV access closure from March 1 to August 31 (last 0.5 mile before National Forest boundary) applies only to commercial use and would specify a turnaround point each year. 				
<p>Per 2020 ROD/MMPs</p> <p>McLoyd Canyon-Moon House RMZ</p> <p>The McLoyd Canyon-Moon House RMZ occurs within the Fish Creek Canyon WSA and is managed under current WSA policy. The following are in addition to this management:</p> <ul style="list-style-type: none"> The area would be designated as an OHV closed area. Public access would be limited via a permit system for day visits. Permits would be required and managed through the Cedar Mesa permits reservation system; 20 people per day allowed for private use and 16 additional people allowed on commercial guided trips or tours led by BLM-trained docents. Group sizes would be no larger than 12 people. Access to the interior corridor of Moon House would be limited to four people at any one time. Visitors would not be allowed to enter the Moon Room or other adjoining rooms within Moon House. Human waste must be packed out. No overnight use would be allowed. Hiking to the Moon House site would be limited to the designated trail. Hiking to other sites in the RMZ may also be limited to existing and designated trails if determined necessary. RMZ would be closed to pack animals and pets. Campfires would not be allowed. The area would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. McLoyd Canyon would be closed to overnight use from the head of the canyon to UTM 607100E, 4143495N. 	<p>Moon House RMZ</p> <p>RMZ Objective: Manage the Moon House RMZ to protect Moon House and other cultural sites located within the RMZ. Use permits and trailhead materials to promote an ethic of stewardship while allowing hiking and cultural site visitation recreation activities. Maintain a predominantly remote physical and social recreation settings.</p> <p>The Moon House RMZ occurs within the Fish Creek Canyon WSA and is managed under current WSA policy.</p> <ul style="list-style-type: none"> Visitation would be by ISRPs only. All permit restrictions under Alternative A would be kept in place until development of the RAMP. Visitors would not be allowed to enter the interior corridor of Moon House. Solid human waste must be packed out and disposed of at appropriate facilities. Hiking to the Moon House site would be limited to the designated trail. Hiking to other sites in the RMZ may also be limited to existing and designated trails if determined necessary. The RMZ would be closed to pack animals and pets. Campfires would not be allowed. No overnight use would be allowed. 	<p>Moon House RMZ</p> <p>Same as Alternative B except for the following:</p> <ul style="list-style-type: none"> Access to the interior corridor of Moon House would be limited to four visitors at a time. Guided trips (led by the BLM, BLM volunteers, or permitted outfitters and guides) would be encouraged to reduce potential for resource damage. 	<p>Moon House MZ</p> <p>MZ Objective</p> <p>Same as Alternative B.</p> <p>Camping: Camping would be prohibited.</p> <p>Recreation management decisions from Alternative A and the Cedar Mesa Business Plan are included in Appendix E and would be carried forward until implementation-level planning is completed.</p> <p>Natural Bridges Overflow MZ</p> <p>Acres: 1,458</p> <p>MZ Objective</p> <p>Manage the MZ to limit and control dispersed camping activities and the proliferation and expansion of user-created campsites in the area.</p>	<p>Moon House Remote RMZ</p> <p>Same as Alternative B.</p>
<p>Per 2008 Monticello RMP</p> <p>San Juan River SRMA</p> <p>SRMA Goals and Objectives</p> <p>Provide outstanding river-related recreational opportunities and visitor experiences while protecting natural and cultural resource values with integrated management between the BLM, NPS, and Navajo Nation.</p> <p>Allow for boating and rafting activities regulated through permit issuance.</p> <p>By the year 2012, manage this SRMA to provide opportunities for visitors to realize personal development and growth, enhanced lifestyle increased local tourism revenue and maintenance of distinct RSCs, providing no fewer than 80% of responding visitors and impacted community residents at least a moderate realization of these benefits (i.e., 3 on probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).</p> <p>Permits would be issued to commercial companies on a 5-year designated basis. They would also be issued to private users through an annual lottery system.</p> <p>River trips on the San Juan River require an SUP.</p> <p>Unavailable for woodland product use, except for limited on-site collection of dead wood for campfires. Woodland use</p>	<p>San Juan River SRMA</p> <p>Acres: 5,355 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>SRMA Objective</p> <p>Manage the San Juan River SRMA to protect BENM objects while providing opportunities for river boating, camping, and cultural site visitation, with integrated management between the BLM, NPS, and Navajo Nation.</p> <p>Management actions would protect and enhance the targeted recreation opportunities, experiences, benefits, and RSCs of the SRMA (see Appendix E: Supporting Information for Recreation and Visitor Services Decisions), provided those management actions do not conflict with the protection of BENM objects.</p> <p>In visitor assessments, 80% of respondents who participated in targeted activities report the ability to realize the targeted visitor experiences and benefits of the SRMA (see Appendix E: Supporting Information for Recreation and Visitor Services Decisions).</p> <p>Wood product use is limited to the on-site collection of driftwood for campfires.</p> <p>Motorized Boating</p>	<p>San Juan River SRMA</p> <p>Acres: 5,355 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>SRMA Objective</p> <p>Same as Alternative B.</p> <p>Firearm Use</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Other Resources</p> <p>Grazing</p> <ul style="list-style-type: none"> Same as Alternative B. <p>VRM</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Motorized Boating</p> <ul style="list-style-type: none"> Downstream motorized travel is allowed at low, wakeless speed. Upstream travel is prohibited, except for authorized use or emergency purposes. <p>Planning and Coordination</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Permits</p> <ul style="list-style-type: none"> River trips on the San Juan River downstream of Montezuma Creek require an ISRP. Permits would be 	<p>San Juan River MA</p> <p>MA Objective</p> <p>Same as Alternative B.</p> <p>Motorized Boating</p> <ul style="list-style-type: none"> No private or commercial motorized use is allowed (official and emergency use allowed). Wood product use is limited to the on-site collection of driftwood for campfires. <p>Camping</p> <ul style="list-style-type: none"> Campsites would be designated along the river corridor where necessary to reduce user conflicts, to provide for public safety, and to protect BENM objects. Camping in designated sites may either be encouraged or required to meet MA goals and objectives, as identified in the RAMP. Designated campsites are available for permitted river users only. Within the Sand Island MZ, camping is only allowed in the developed campground. <p>Firearm Use: Recreational shooting would be prohibited.</p> <p>Grazing</p> <ul style="list-style-type: none"> Grazing in the riparian area would only be allowed October 1–May 31 and must meet or exceed PFC and incorporate rest-rotation and/or deferment systems. This includes the 	<p>San Juan River</p> <p>Goals and Objectives</p> <p>Protect Monument objects, including rock writing panels near campgrounds and river access.</p> <p>Coordinate and integrate management with the Navajo Nation, BEC, and NPS to ensure protection of natural and cultural resources.</p> <p>Allow for boating and rafting activities regulated through permit issuance.</p> <p>Grazing</p> <ul style="list-style-type: none"> Same as Alternative B for the San Juan River SRMA. <p>Camping</p> <ul style="list-style-type: none"> Same as Alternative B The BLM would collaborate with the BEC, Tribal Nations, and the State of Utah to manage camping and other recreational activities to be consistent with the protection of BENM objects <p>Prior to the development of management criteria specific to the Sand Island area, the following general allowable uses and management actions apply:</p> <ul style="list-style-type: none"> Minimal visitor services at Sand Island ramp areas would be provided for visitor health and safety and resource protection.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>within the floodplain is limited to collection of driftwood for campfires.</p> <p>Cottonwood and willow harvest is allowed for Native American ceremonial uses only by permit. Restrictions on this permitted harvest would be implemented as necessary to achieve or maintain PFC and to maintain or improve T&E species/special status species habitats</p> <p>Campfires allowed only with a fire pan.</p> <p>The bench above Sand Island Campground (256 acres) is closed to camping.</p> <p>The San Juan River is managed as a SRMA (9,859 acres) (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas). The boundary remains as in the previous RMP with the exception of state Section 16 or the Holliday Pit Quarry on Lime Ridge.</p> <p>The SRMA boundary east of existing oil and gas leasing category NSO is below the bench, thereby allowing access to high-quality gravel.</p> <p>Motorized Boating</p> <ul style="list-style-type: none"> Downstream travel is allowed at low, wakeless speed. Upstream travel is prohibited, except for emergency purposes (SPM). <p>Launch Limits</p> <ul style="list-style-type: none"> Launch limits allow approximately 40,000 user/days per year. Trip size is limited to 25 people total (including crew) for private trips. Commercial group size limits on the San Juan River would remain at 33 people (25 passengers plus eight guides) per trip. <p>Commercial/Private Allocations</p> <ul style="list-style-type: none"> Commercial use is allowed up to 40% of total use. Two commercial day trips per day (one launch of 25 passengers and one launch of 10 passengers) are allowed and are not included in the launch limits. <p>Administrative/Research Use</p> <ul style="list-style-type: none"> Administrative and research use would be authorized on a case-by-case review and determination. <p>Visitor Services</p> <ul style="list-style-type: none"> Minimal visitor services at the Sand Island and Mexican Hat ramp areas would be provided for visitor health and safety and resource protection. <p>Designated Campsites</p> <ul style="list-style-type: none"> A memorandum of understanding would be signed between the NPS/Glen Canyon NRA and the Navajo Nation. This memorandum would include details on numbers of campsites and their associated permit restrictions. <p>Non-Boating Use</p> <ul style="list-style-type: none"> With the exceptions of along Lime Creek Road, the Mexican Hat Rock area, and the Mexican Hat Boat Ramp, vehicle camping is allowed within the San Juan SRMA only upstream of Comb Wash. In this area, dispersed vehicle camping is allowed in previously disturbed areas within 150 feet of designated routes. All campers (including backpackers) must have carry-out toilets. The bench above Sand Island Recreation Area is closed to camping, including 122 acres outside of the SRMA that fall within the ERMA. The closure area boundary is described as follows: 	<ul style="list-style-type: none"> No private or commercial motorized use is allowed (official and emergency use allowed). <p>Camping</p> <ul style="list-style-type: none"> Campsites would be designated along the river corridor where necessary to reduce user conflicts; provide for public safety; and protect BENM objects. Camping in designated sites may either be encouraged or required to meet SRMA goals and objectives, as identified in the RAMP. Designated campsites are available for permitted river users only. Within the Sand Island RMZ, camping is only allowed in the developed campground. <p>SRPs</p> <ul style="list-style-type: none"> No competitive events. Vending permits would be limited to vehicle/visitor shuttle operations. A cap on commercial SRPs for river guiding would be established in a RAMP or other implementation-level planning. <p>Firearm Use</p> <ul style="list-style-type: none"> Recreational shooting would be prohibited. <p>Other Resources</p> <p>Grazing</p> <ul style="list-style-type: none"> Grazing in the riparian area would only be allowed from October 1 to May 31 and must meet or exceed PFC and incorporate rest-rotation and/or deferral systems. This includes Perkins Brothers (outside Slickhorn Canyon), East League, and McCracken Wash Allotments. <p>VRM</p> <ul style="list-style-type: none"> VRM Class II to allow for minimal recreation infrastructure (e.g., signs, fences, trail improvements) for the protection of BENM objects, except the Sand Island RMZ managed as VRM Class III and San Juan WSR Suitable Segment 5 managed as VRM Class I. <p>Planning and Coordination</p> <ul style="list-style-type: none"> The BLM would establish and maintain, throughout the life of this RMP/EIS, memoranda of understanding with the NPS and Navajo Nation for collaborative management of the river corridor between Montezuma Creek and Clay Hills. Within 2 years of issuance of this RMP/EIS, the BLM would develop a San Juan River RAMP in collaboration with the BEC, NPS, and Navajo Nation for integrated and collaborative management of the entire river segment between Montezuma Creek and Clay Hills. <p>Permits</p> <ul style="list-style-type: none"> River trips on the San Juan River downstream of Sand Island require an ISRP. Permits would be issued to private users through a permit lottery and reservation system. <p>Campfires</p> <ul style="list-style-type: none"> Campfires are allowed only in a fire pan, and campfire ash should be hauled away (except for BLM-constructed fire rings at Sand Island Campground). <p>Launch Limits</p> <ul style="list-style-type: none"> Launch limits and permit allocations would be maintained year-round to protect BENM objects, provide targeted recreation experiences and benefits, achieve the desired RSCs of the SRMA, and maintain a level of use that is commensurate with campsite and boat ramp capacity. <p>Commercial/Private Allocations</p>	<p>issued to private users through a permit lottery and reservation system (same as Alternative A).</p> <p>Campfires</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Vegetation</p> <ul style="list-style-type: none"> No priority for invasive vegetation treatment at developed recreation facilities and high use areas. <p>Launch Limits</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Commercial/Private Allocations</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Group Size</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Camping</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Human Waste</p> <ul style="list-style-type: none"> Same as Alternative B. <p>SRPs</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Pets</p> <ul style="list-style-type: none"> Same as Alternative B. <p>Sand Island RMZ</p> <ul style="list-style-type: none"> Same as Alternative B. <p>San Juan Hill RMZ</p> <p>Same as Alternative B, except that a permit would be required for OHV use in the RMZ, and permits may be allocated if necessary to protect BENM objects.</p>	<p>Perkins Brothers (outside Slickhorn Canyon), East League, and McCracken Wash Allotments.</p> <p>VRM</p> <ul style="list-style-type: none"> VRM Class II to allow for minimal recreation infrastructure (e.g., signs, fences, trail improvements) for the protection of BENM objects, except Sand Island MZ managed as VRM Class III and San Juan WSR Suitable Segment 5 managed as VRM Class I. <p>Recreation management decisions from Alternative A and subsequent documents including the San Juan River Business Plan and Campground Business Plan are included in Appendix E and would be carried forward until implementation-level planning is completed.</p>	<p>Planning and Coordination:</p> <ul style="list-style-type: none"> A memorandum of understanding would be signed between the NPS/GCNRA and the Navajo Nation. This memorandum would include details on the numbers of campsites and their associated permit restrictions. <p>Permits</p> <ul style="list-style-type: none"> Permits are required for all recreational river trips. SRPs may be issued to commercial companies on a 5-year designated basis and may be issued to private users through an annual lottery system. The following group size limits would remain in effect until a San Juan River zone management plan is developed. Trip size is limited to 25 people total (including crew) for private trips. Commercial group size limits on the San Juan River would remain at 33 people (25 passengers plus eight guides) per trip. <p>Campfires</p> <ul style="list-style-type: none"> Unavailable for wood product use, except for limited on-site collection of dead wood for campfires. Woodland use within the floodplain is limited to collection of driftwood for campfires. Campfires allowed only with a fire pan. <p>Human Waste</p> <ul style="list-style-type: none"> Same as Alternative B for the San Juan River SRMA. <p>SRPs</p> <ul style="list-style-type: none"> Same as Alternative B for the San Juan River SRMA. <p>Pets</p> <ul style="list-style-type: none"> Same as Alternative B for the San Juan River SRMA. <p>Vegetation</p> <ul style="list-style-type: none"> Same as Alternative B for the San Juan River SRMA.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> ○ US-191 on the north ○ The edge of the bench to the south ○ The private land on the west ○ The edge of the bench on the east <ul style="list-style-type: none"> ● Area wide, camping would be closed within 0.5 mile of designated campsites. <p>Grazing</p> <ul style="list-style-type: none"> ● Grazing in the riparian area is restricted to October 1–May 31 and must meet or exceed PFC and incorporate rest-rotation and/or deferment systems. This includes the Perkins Brothers (outside Slickhorn Canyon), East League, and McCracken Wash Allotments. <p>Watershed</p> <ul style="list-style-type: none"> ● Watershed control structures are subject to surface restrictions and seasonal restrictions to protect bighorn sheep lambing and rutting areas. ● Vehicle access in other areas within the SRMA is limited to designated routes. ● Area is subject to fire suppression to protect riparian habitat. <p>Other</p> <ul style="list-style-type: none"> ● Manage the San Juan SRMA to maintain an environment of isolation insofar as allowed by the river permit and patrol system. ● Surface disturbance from mining activities on existing claims would be limited to the extent possible without unnecessary impact to valid existing rights. ● No vehicle access or mechanized travel is allowed from Comb Wash downstream to Lime Creek and below Mexican Hat Bridge (except for motorized boat use on the river). ● Mechanized/motorized travel is limited to designated routes. <p>Per 2020 ROD/MMPs</p> <p>San Juan Hill RMZ</p> <p>SRPs: Competitive and vending use not allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities, an SRP or letter of agreement is required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals; however, if monitoring indicates significant impacts to BENM objects, the BLM would consider adjusting group size thresholds during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment.</p> <p>Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites but not restricted to those sites. Campfires would be allowed in fire pans, except no campfires are allowed in archaeological sites.</p> <p>Recreational use of the San Juan River within the area previously designated as the San Juan River SRMA.</p> <p>River trips on the San Juan River would require an ISRP. Commercial SRPs would be issued to commercial companies on a 5-year designated basis. They would also be issued to private users through an annual lottery system.</p> <p>The area would be unavailable for woodland product use except for limited on-site collection of dead wood for campfires. Woodland use within the floodplain would be</p>	<ul style="list-style-type: none"> ● Commercial and private use allocations would be adaptive and determined based on the relative visitor demand for self-supported (private) and guided (commercial) recreation opportunities, and preceding actual use trends. Allocations would sustain the viability of both types of visitor opportunities. The specific commercial/private allocation in Alternative A would remain in effect until superseded by the San Juan River RAMP or other future implementation-level planning. <p>Group Size</p> <ul style="list-style-type: none"> ● A maximum group size limit would be applied to all private and commercial river trips to protect BENM objects, achieve the desired RSCs of the SRMA, and maintain a level of use that is commensurate with campsite and boat ramp capacity. The group size limit in Alternative A would remain in effect until superseded by the San Juan River RAMP or other future implementation-level planning. <p>Human Waste</p> <ul style="list-style-type: none"> ● All solid human waste must be packed out and disposed of at appropriate facilities. <p>Pets</p> <ul style="list-style-type: none"> ● No pets would be allowed for river boating activities downstream of Sand Island or at the Honaker Trail. <p>Vegetation</p> <ul style="list-style-type: none"> ● Developed facilities, designated campsites, existing and designated trails, and public use cultural sites would be prioritized for invasive vegetation treatment projects in the river corridor. <p>Sand Island RMZ</p> <p>RMZ Objective</p> <ul style="list-style-type: none"> ● Manage the Sand Island RMZ for river boating, developed camping, and cultural site visitation recreation opportunities. ● Manage the Sand Island RMZ for predominantly frontcountry recreation setting and as a focus area for developing and enhancing visitor facilities and communicating recreation use rules, regulations, and ethics to San Juan River and BENM visitors. ● Manage the Bluff River Trail system in coordination with Bluff community partners and private landowners to provide non-motorized, land-based opportunities for visitors and community members to access the river. ● Swinging Bridge river access site included in the RMZ. ● No dispersed camping. Camping is allowed only in the developed Sand Island Campground. ● Manage as VRM Class III. <p>San Juan Hill RMZ</p> <p>RMZ Objective</p> <ul style="list-style-type: none"> ● Manage the San Juan Hill RMZ for both land-based and river-based cultural site visitation and heritage tourism activities, while minimizing conflict between multiple recreation uses and protecting BENM objects. ● Manage the San Juan Hill RMZ to maintain and enhance a predominantly middle country recreation setting where visitor facilities may be developed only when necessary for the protection of BENM objects. Recreation use rules, regulations, and ethics would be clearly posted on-site and at major access points. 			

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>limited to collection of driftwood for campfires. Campfires would be allowed only with a fire pan.</p> <p>For motorized boating, downstream travel would be allowed at low, wakeless speed. Upstream travel would be prohibited, except for emergency purposes (Semi-Primitive Motorized).</p> <p>Launch limits would allow 40,000 user/days per year.</p> <p>Trip size would be limited to 25 people total (including crew) for private trips. Commercial group size limits would remain at 33 people (25 passengers plus eight guides) per trip.</p> <p>Commercial use would be allowed up to 40% of total use. Two commercial day trips per day (one launch of 25 passengers and one launch of 10 passengers) would be allowed and are not included in the launch limits.</p> <p>Administrative and research use would be authorized on a case-by-case review and determination.</p> <p>Vehicle camping would be allowed only upstream of Comb Wash. In this area, dispersed vehicle camping would be allowed in previously disturbed areas within 150 feet of designated routes</p>	<p>Camping: Area is day use only except for camping in designated campsites under a river permit.</p>			
<p>Canyon Rims SRMA</p> <p>Manage the Canyon Rims SRMA (7,411 acres) as a Destination SRMA to protect, manage, and improve the natural resources of the area while allowing for recreation activities such as developed camping, visiting scenic overlooks, auto touring on the primary road system, touring the secondary road system by motorized vehicle and mountain bike, and hiking and backpacking the canyons, utilizing interpretive and educational opportunities to realize the potential of the area. Major management actions in the Canyon Rims SRMA include the following:</p> <ul style="list-style-type: none"> • Acquired or exchange private and state lands from willing landowners. • Manage the entire area as OHV travel limited to designated roads. • Manage the western rim land areas of Hatch Point as VRM Class II and the remainder of the area as VRM Class III. • Maintain and/or improve all existing developed recreation sites as specified in the Canyon Rims RAMP. • Restrict camping near developed recreation sites. • Close the entire recreation area to wood cutting and gathering. • No backcountry motorized events. • Manage the Anticline Overlook Trail and the Needles Overlook Trail for hiking use only. • Consider development of additional trails and recreation facilities only as necessary. • Focus Area – Scenic Driving Corridors: Needles and Anticline Roads – Utah Scenic Backways. Manage for scenic driving enjoyment. The corridor is defined as having a width of 0.5 mile from the centerline (or to the border of the adjoining Focus Area). 	<p>Canyon Rims SRMA</p> <p>Acres: 7,413 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>SRMA Objective: Manage the Canyon Rims SRMA within BENM to protect BENM objects while allowing for recreation activities such as dispersed camping and visiting scenic overlooks.</p> <p>In visitor assessments, 80% of respondents who participated in targeted activities report the ability to realize the targeted visitor experiences and benefits of the SRMA (see Appendix E: Supporting Information for Recreation and Visitor Services Decisions).</p> <p>Camping: Camping would be restricted to designated sites or developed campgrounds. No camping would be allowed surrounding the Needles and Anticline Overlooks. New campgrounds would be developed in areas that receive heavy use and designated dispersed camping would be physically delineated in the rest of the SRMA (within BENM) in an implementation-level plan.</p> <p>Closed to wood product harvest except where inconsistent with the Religious Freedom Restoration Act and other applicable laws. Wood product harvest would not be prohibited where such prohibition constitutes a substantial burden on religious practices.</p> <p>Manage the Needles and Anticline roads within BENM as a Scenic Driving Corridor Focus Area to manage for scenic driving enjoyment. The corridor is defined as 0.5 mile from the centerline of the road.</p> <p>The BLM would work with the BEC and the Moab FO to amend the existing Canyon Rims RAMP.</p> <p>Existing and new developed recreation facilities would be developed and maintained in areas that receive heavy use. New sites/facilities/trails would be developed or improved outside of these areas if needed to protect BENM objects.</p> <p>No motorized commercial, organized, or competitive events in the Canyon Rims SRMA (within BENM).</p>	<p>Canyon Rims SRMA</p> <p>Same as Alternative B.</p>	<p>Canyon Rims MA</p> <p>Area Objective: Same as Alternative B.</p> <p>Camping: Camping would be restricted to designated sites or developed campgrounds. No camping would be allowed surrounding the Needles and Anticline Overlooks. New campgrounds would be developed in areas that receive heavy use and designated dispersed camping would be physically delineated in the rest of the MA (within BENM) in an implementation-level plan.</p> <p>Recreation management decisions in Alternative A and subsequent documents including the Canyon Rims RAMP are included in Appendix E and would be carried forward until implementation-level plans are completed.</p>	<p>Management not carried forward.</p>
<p>Per 2008 Monticello RMP</p> <p>Dark Canyon SRMA</p> <p>Goals and Objectives:</p>	<p>Dark Canyon ERMA</p> <p>Acres: 40,829 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p>	<p>Dark Canyon ERMA</p> <p>Same as Alternative B with the following exceptions.</p>	<p>Dark Canyon MA</p> <p>Acres 18,802 (Appendix A, Figure 2-31, Alternative D, management zones and management areas)</p> <p>Area Objective</p>	<p>No similar management</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> • Provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values through integrated management between the BLM, USDA Forest Service, and NPS. • Provide a remote, roadless, and undeveloped recreational experience in an essentially unmodified natural environment. Continue to provide a scenic backcountry experience of expansive views from within one of the deepest canyon systems in the region. • By the year 2012, manage this SRMA to provide opportunities for visitors to realize personal development and growth, enhanced lifestyle increased local tourism revenue and maintenance of distinct RSCs, providing no fewer than 80% of responding visitors and impacted community residents at least a moderate realization of these benefits (i.e., 3 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization). <p>REC-118 Create and allocate an interagency permit and fee system for these canyons as necessary to preserve resources and the visitor experience.</p> <p>REC-119 The 1991 Canyon Basins SRMA is dissolved and three new SRMAs are created:</p> <ul style="list-style-type: none"> • Dark Canyon SRMA • Indian Creek SRMA • Beef Basin SRMA <p>REC-120 The Dark Canyon SRMA (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas) includes canyon rims and bottoms for Dark Canyon, Gypsum Canyon, Bowdie Canyon, Lean To Canyon, Palmer Canyon, Lost Canyon, Black Steer Canyon, Young's Canyon, and Fable Valley Canyon. Trailheads and associated parking/camping areas are included within the SRMA boundaries where the canyons are specified as the SRMA.</p> <p>REC-121 The Dark Canyon WSA overlays the SRMA and would be managed according to the IMP.</p> <p>REC-122 The SRMA is unavailable for livestock grazing in the canyons and available to livestock grazing on mesa tops.</p> <p>REC-123 An Interagency Management Plan would be written in coordination with the contiguous NPS and USDA Forest Service agencies.</p> <p>REC-124 Dark Canyon SRMA (30,810 acres) (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas) is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • Group size is limited to 18 people for private and commercial. • Three commercial trips are allowed per week. • Up to 20 total private users allowed per day. This number may be altered depending upon future visitor impacts. • If and where necessary, camping would be restricted to designated sites only. 	<p>ERMA Objective</p> <ul style="list-style-type: none"> • Manage the Dark Canyon ERMA to protect BENM objects while providing opportunities for backpacking and dispersed camping, with a focus on developing and enhancing visitor facilities in limited areas at trailheads, while maintaining remote and backcountry recreation settings throughout the majority of the area. • Within the Dark Canyon ERMA, recreation use rules, regulations, and ethics are clearly posted on-site at major access points and trailheads, and on-site facilities are the primary means for managing visitation. <p>The Dark Canyon ERMA includes canyon rims and bottoms for Dark Canyon, Lean To Canyon, Lost Canyon, Black Steer Canyon, and Young's Canyon. Trailheads and associated parking/camping areas are included within the ERMA boundaries where the canyons are specified as the ERMA.</p> <p>Consistent with the Religious Freedom Restoration Act and other applicable laws, prohibit private and/or commercial collection of wood product use, except for the on-site collection of dead wood for campfires on mesa tops. Private collection of wood products would not be prohibited where such prohibition constitutes a substantial burden on religious practices.</p> <p>Complete an interagency implementation-level RAMP in coordination with the BEC and the contiguous NPS unit within 5 years of the issuance of this RMP/EIS.</p> <p>If needed to reduce resource damage or encourage visitor stewardship, create a permit and fee system for these canyons as necessary to protect BENM objects and reduce user conflict.</p> <p>Group size limits for the ERMA would be established in the RAMP.</p> <p>Campfires are allowed on mesa tops.</p> <p>Dark Canyon Backpacking RMZ Acres: 18,799</p> <p>RMZ Objective: Manage the Dark Canyon Backpacking RMZ to protect BENM objects while providing opportunities for backpacking and preventing impairment to the suitability of Dark Canyon WSA and Dark Canyon Suitable-Wild WSR segment.</p> <p>Manage the RMZ to maintain predominantly remote recreation settings.</p> <p>Campsites within the canyon would be designated. Once designated, camping would be restricted to designated sites only.</p> <p>Until the RAMP is developed, group size limits within the RMZ would continue as it is under the No Action Alternative. Limits on the amount of commercial use would be determined through the RAMP. Until the RAMP is developed, commercial entries would continue as it is under Alternative A.</p> <p>Campfires are not allowed. Only cook stoves are allowed. Solid human waste must be packed out and disposed of at appropriate facilities.</p> <p>Pets are not allowed within the canyons.</p>	<p>Acres: 40,829 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>ERMA Objective</p> <p>Same as Alternative B with the exception of:</p> <ul style="list-style-type: none"> • Within the Dark Canyon ERMA, permits and other off-site methods are used as the primary means for communicating and enforcing recreation use rules, regulations, and ethics to manage visitation. <p>REC-120 Same as Alternative B.</p> <p>REC-118 Create and allocate an interagency permit and fee system for these canyons to preserve resources and encourage visitor stewardship.</p> <p>REC-124 Dark Canyon ERMA Management Actions Same as Alternative B.</p> <p>Dark Canyon Backpacking RMZ Acres: 18,799</p> <p>RMZ Objective: Same as Alternative B.</p> <p>Management Actions: Same as Alternative B except Campsites within the canyon would be designated. Once designated, camping would be encouraged in designated sites.</p> <p>Limits on the amount of private use would be determined through the RAMP, and a limited allocated permit system for private use would be implemented.</p> <p>If solid human waste becomes a problem, the requirement for carrying out waste and disposing of it at appropriate facilities may be implemented in the canyon.</p> <p>Pets are allowed on leash and under physical control.</p>	<p>Same as Alternative B.</p> <p>Consistent with the Religious Freedom Restoration Act and other applicable laws, prohibit private and/or commercial collection of wood product use, except for the on-site collection of dead wood for campfires on mesa tops. Private collection of wood products would not be prohibited where such prohibition constitutes a substantial burden religious practices.</p> <p>Camping</p> <ul style="list-style-type: none"> • Campsites would be designated where necessary to reduce user conflicts, to provide for public safety, and to protect BENM objects. Camping in designated sites may either be encouraged or required to meet area goals and objectives, as identified in the RAMP. <p>Recreation management decisions in Alternative A are included in Appendix E and would be carried forward until implementation-level planning is completed.</p>	

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> • Campfires are allowed on mesa tops. Cook stoves only in canyons. • Unavailable for private and/or commercial collection of woodland product use, except for the on-site collection of dead wood for campfires on mesa tops. • If human waste becomes a problem, carrying out waste may be implemented in canyon. • Pets are allowed on leash and under physical control. • Closed to OHV use. 				
<p>Per 2008 Monticello RMP</p> <p>White Canyon SRMA</p> <p>Goals and Objectives:</p> <p>Provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values through integrated management between the BLM and NPS (including the Glen Canyon NRA and Natural Bridges National Monument).</p> <p>Provide a spectacular canyoneering recreational experience in a popular, world renowned, and easily accessible slot canyon; including backcountry hiking and backpacking, remote camping, and cultural site visitation and exploration.</p> <p>By the year 2012, manage this SRMA to provide opportunities for visitors to realize personal development and growth, an enhanced lifestyle increased local tourism revenue and maintenance of distinct RSCs, providing no fewer than 80% of responding visitors and impacted community residents at least a moderate realization of these benefits (i.e., 3 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).</p> <p>REC-132</p> <p>White Canyon SRMA (2,828 acres) (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas) is managed with the following management prescriptions:</p> <ul style="list-style-type: none"> • A backcountry allocated permit system would be established as necessary to protect resources. • If human waste becomes a problem, carrying out waste may be implemented in the canyon. • Campfires are not allowed in the canyons. Cook stoves only in canyons. • Managed as VRM Classes I and II. • OHV use closed and limited to designated routes. <p>REC-133</p> <ul style="list-style-type: none"> • Trailheads and associated parking/camping areas are included within the SRMA boundary where the canyons are specified as the SRMA. The White Canyon SRMA is defined as from rim to rim. <p>REC-134</p> <ul style="list-style-type: none"> • Canyons are excluded from woodland product use including on-site collection of dead wood for campfires. <p>REC-135</p> <ul style="list-style-type: none"> • The Cheese Box Canyon WSA overlays a portion of the White Canyon SRMA; this area is managed in accordance with the IMP. 	<p>White Canyon ERMA</p> <p>Acres: 124,827 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>ERMA Objective</p> <p>Manage the White Canyon ERMA to protect BENM objects while providing opportunities for canyoneering, backpacking, scenic driving (OHV), and dispersed camping. Developing and enhancing visitor facilities in limited areas to support visitor ethics and stewardship while and maintaining of a predominantly backcountry recreation setting outside of RMZs.</p> <p>Within the White Canyon ERMA, recreation use rules, regulations, and ethics are clearly posted on-site at major White Canyon and Dark Canyon ERMA access points and trailheads, and on-site facilities are the primary means for managing visitation.</p> <p>In collaboration with the BEC, develop a RAMP for the ERMA within 5 years of issuance of this RMP/EIS.</p> <p>The White Canyon ERMA is managed with the following management prescriptions:</p> <ul style="list-style-type: none"> • Group size limits for the ERMA would be established in implementation-level planning. • The entire ERMA would have minimal infrastructure. This would include signs for trailheads and for motorized and non-motorized use. Signs would be maintained and improved to provide for the protection of BENM objects. <p>White Canyon Canyoneering RMZ:</p> <p>Acres: 7,222</p> <p>RMZ Objective:</p> <p>Manage the White Canyon Canyoneering RMZ to protect BENM objects while providing opportunities for canyoneering and backpacking and preventing impairment to the suitability of the Cheese Box Canyon WSA.</p> <p>Manage the RMZ to maintain predominantly remote recreation settings.</p> <ul style="list-style-type: none"> • Limits on the amount of commercial use would be determined through the RAMP. • Solid human waste must be packed out and disposed of at appropriate facilities. • Campfires are not allowed. Only cook stoves are allowed. <p>Natural Bridges Overflow RMZ:</p> <p>Acres: 1,458</p> <p>RMZ Objective: Manage the Natural Bridges Overflow RMZ to limit and control dispersed camping activities and the proliferation/expansion of user-created campsites in the area.</p> <p>Manage the RMZ to maintain middle country recreation settings.</p>	<p>White Canyon ERMA</p> <p>Acres: 124,827 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>ERMA Objective:</p> <p>Same as Alternative B with the exception of:</p> <ul style="list-style-type: none"> • Within the White Canyon ERMA, permits and other off-site methods are used as the primary means for communicating and enforcing recreation use rules, regulations, and ethics to manage visitation. <p>Same as Alternative B except that: A permit system would be established for the entire ERMA.</p> <p>White Canyon Canyoneering RMZ:</p> <p>Acres: 7,222</p> <p>RMZ Objectives: Same as Alternative B.</p> <p>Management Actions: Same as Alternative B, except:</p> <ul style="list-style-type: none"> • An allocated permit system would be developed for canyoneering in the White Canyon Canyoneering RMZ. <p>Natural Bridges Overflow RMZ:</p> <p>Acres: 1,458</p> <p>RMZ Objective: Same as Alternative B.</p> <p>Campsites would be designated. Once designated, camping would be restricted to designated sites only and would require a permit.</p> <p>Bicentennial Highway RMZ:</p> <p>Acres: 4,178</p> <p>RMZ Objectives: Same as Alternative B.</p> <p>Management Actions: Same as Alternative B.</p>	<p>White Canyon MA</p> <p>Acres: 7,222 (limited to canyons only) (Appendix A, Figure 2-31, Alternative D, management zones and management areas)</p> <p>Area Objective:</p> <p>Same as Alternative C.</p> <p>Camping</p> <ul style="list-style-type: none"> • Campsites would be designated where necessary to reduce user conflicts, to provide for public safety, and to protect BENM objects. Camping in designated sites may either be encouraged or required to meet area goals objectives, as identified in the RAMP. <p>Recreation management decisions in Alternative A are included in Appendix E and would be carried forward until implementation-level planning is completed.</p>	<p>No similar management.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
	<ul style="list-style-type: none"> • Campsites would be designated. Once designated, camping would be restricted to designated sites only. • Solid human waste must be packed out and disposed of at appropriate facilities. • Campfires are not allowed. Only cook stoves are allowed. • Limits on the amount of commercial use would be determined through the RAMP. <p>Bicentennial Highway RMZ: Acres: 4,178</p> <p>RMZ Objective: Manage the Bicentennial Highway RMZ for a frontcountry physical recreation setting as the focus area for developing and enhancing visitor facilities at trailheads and major visitor access areas to communicate recreation use rules, regulations, and ethics to visitors.</p> <p>Manage as VRM Class III.</p> <ul style="list-style-type: none"> • Maintain and enhance OHV and canyoneering trailheads at Soldier's Crossing, Duckett Crossing, Gravel Crossing, and Black Hole 			
<p>Per 2008 Monticello RMP Tank Bench SRMA Goals and Objectives</p> <p>Provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.</p> <p>Tank Bench SRMA provides easy access to a spectacular complex of cultural sites. Provide a safe, natural, well-designed accessible recreational experience for all visitors to enjoy the world-renowned cultural resources and scenic values. Use visitor information and interpretation as a primary tool to protect sensitive resources, discourage vandalism, and encourage visitor appreciation of public lands.</p> <p>Tank Bench SRMA (2,721 acres) (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas) is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • Dispersed hiking allowed; not limited to existing and designated trails. • Area would remain open to domestic pets and pack animals, but use may be limited if damage is occurring to cultural resources. • Commercial group size limited to 12 people. • Closed to OHV use. • Livestock use would continue, but it may be limited if cultural resources are impacted. • Available for range, wildlife habitat, watershed improvements, vegetation treatments, and other surface-disturbing land treatments if consistent with management plan objectives. • Campfires allowed. • Closed to private and/or commercial use of woodland products (including on-site collection of dead wood for campfires) with the exception of traditional Native American cultural uses, as long as they do not adversely impact other resource values. • Manage as VRM Classes III and IV. • The BLM would complete a joint recreation/cultural RMP for this area based on the [2008] RMP. 	<p>Management not carried forward. The Tank Bench SRMA would not be managed as an RMA due to it not meeting current guidance.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>No similar management.</p>
<p>Per 2008 Monticello RMP</p>	<p>Beef Basin ERMA</p>	<p>Beef Basin ERMA</p>	<p>Beef Basin would not be carried forward as an MA.</p>	<p>No similar management.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Beef Basin SRMA</p> <p>Beef Basin SRMA (17,191 acres) (Appendix A, Figure 2-29, Alternative A, recreation management zones and recreation management areas) is managed with the following prescriptions:</p> <ul style="list-style-type: none"> • Available for private and/or commercial use of woodland products (including on-site collection of dead wood for campfires). • Livestock use would continue but may be limited if cultural resources are impacted. • Available for range, wildlife habitat, watershed improvements, vegetation treatments, and other surface-disturbing land treatments if consistent with management plan objectives. • OHV use limited to designated routes. • A car campground would be developed in Ruin Park for remote camping. • Remote camping areas would be designated in Middle Park, House Park, and along Beef Basin Loop Road, as well as other areas as necessary, to control impacts to cultural resources. • Until remote camping areas are designated in this area, designated campsites would be allowed in previously disturbed areas within 150 feet of designated routes. • Campfires are allowed and are restricted to fire rings where fire rings are available. In dispersed camping areas, where fire rings are not available, campfires are subject to Leave No Trace standards. • Dispersed campsites that impact archaeological sites would be closed. • Cultural site visitation limited to existing and designated trails. • Groups larger than 20 people total are required to camp in designated areas. Human waste must be packed out. • Manage as VRM Class III. • The BLM would work with the USDA Forest Service and NPS to develop interagency recreation commercial permits. • The BLM would complete a joint recreation/CRMP for the area based on the [2008] RMP. 	<p>Acres: 25,083 (expanded RMA to include Fable Valley, previously in the Dark Canyon SRMA) (Appendix A, Figure 2-30, Alternatives B and-C, recreation management zones and recreation management areas)</p> <p>ERMA Objective:</p> <p>Manage the Beef Basin ERMA to protect BENM objects while providing opportunities for cultural site visitation, scenic driving (OHV), and backpacking, with a focus on developing minimal visitor facilities, and maintenance of predominantly remote and backcountry physical and social recreation settings.</p> <p>Within the Beef Basin ERMA, recreation use rules, regulations, and ethics are clearly posted on-site at major access points and trailheads, and on-site facilities are the primary focus for managing visitation.</p> <p>Dispersed camping areas would be designated, and once designated, camping would be limited to those areas. Until campsites are designated in this area, dispersed camping would be allowed as described under the No Action Alternative.</p> <p>In collaboration with the BEC, develop a RAMP for the ERMA within 5 years of issuance of this RMP/EIS.</p> <p>Campfires are allowed and are restricted to fire rings where fire rings are available. In dispersed camping areas, where fire rings are not available, campfires are subject to Leave No Trace standards.</p> <p>Dispersed campsites that impact archaeological sites would be closed.</p> <p>Group size limitations would be determined in the RAMP. Until the RAMP is written, group size would be managed as it is under Alternative A.</p> <p>Solid human waste must be packed out and disposed of at appropriate facilities.</p> <p>Fable Valley RMZ: Acres: 7,870</p> <p>RMZ Objective: Manage the Fable Valley RMZ to protect BENM objects while providing opportunities for cultural site visitation and backpacking in a remote setting.</p> <p>RMZ Management Actions: Facilities would only be allowed at the two Fable Valley trailheads.</p>	<p>Acres: Same as Alternative B (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>ERMA Objective:</p> <p>Same as Alternative B with the exception of:</p> <ul style="list-style-type: none"> • Within the Beef Basin ERMA, permits and other indirect, off-site methods are used as the primary means for communicating and enforcing recreation use rules, regulations, and ethics to manage visitation. <p>Same as Alternative B with following exception:</p> <ul style="list-style-type: none"> • Camping would be by permit only. <p>Fable Valley RMZ: Acres: 7,870</p> <p>RMZ Objectives: Same as Alternative B.</p> <p>Same as Alternative B, with the following exception:</p> <ul style="list-style-type: none"> • Backpacking would require a permit. 		
<p>No corresponding management.</p>	<p>Valley of the Gods ERMA</p> <p>Acres: 45,763 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>ERMA Objective:</p> <p>Manage the Valley of the Gods ERMA to protect BENM objects while providing opportunities for scenic driving and dispersed camping with a focus on developing and enhancing visitor facilities in limited areas, and maintenance of predominantly middle country recreation setting.</p> <p>Within the Valley of the Gods ERMA, recreation use rules, regulations, and ethics are clearly posted on-site at major access points and on-site facilities are the primary means for managing visitation.</p> <p>Managed as VRM Class I with the exception of highway access portals (57 acres), which would be managed as VRM Class II and 61 acres of the Goosenecks RMZ, which would be managed as VRM Class III.</p> <p>Dispersed camping areas would be designated, and once designated, camping would be limited to those areas.</p>	<p>Valley of the Gods ERMA</p> <p>Acres: 45,763 (Appendix A, Figure 2-30, Alternatives B and C, recreation management zones and recreation management areas)</p> <p>ERMA Objective:</p> <p>Manage the Valley of the Gods ERMA to protect BENM objects while providing opportunities for scenic driving and dispersed camping, with a focus on off-site education (e.g., internet education and interactive interpretation, off-site interpretation) methods for the protection of BENM objects and maintenance of a predominantly middle country recreation setting.</p> <p>Within the Valley of the Gods ERMA, permits and other off-site methods are used as the primary means for communicating and enforcing recreation use rules, regulations, and ethics to manage visitation.</p> <p>Same as Alternative B with the following exceptions:</p> <ul style="list-style-type: none"> • Dispersed camping areas would be designated, and once designated, camping would be limited to those areas and permits would be required for dispersed camping 	<p>Valley of the Gods MA</p> <p>Acres: 34,390 (Appendix A, Figure 2-31, Alternative D, management zones and management areas)</p> <p>Area Objective:</p> <p>Same as Alternative B.</p> <p>Management Actions:</p> <p>Managed as VRM Class I with the exception of highway access portals (57 acres) which would be managed as VRM Class II and 61 acres of the Goosenecks MZ which would be managed as VRM Class III.</p> <p>ROW exclusion area (within ACEC).</p> <p>Unavailable for private and/or commercial use of wood products.</p> <p>Unmanned aircraft system (UAS) use, takeoff, and landing within the MA by permit only.</p> <p>Camping: Camping would be managed the same as Alternative A until an implementation-level camping plan is developed.</p>	<p>No similar management.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
	<p>Campfires only allowed in agency-provided fire rings in designated campsites.</p> <p>ROW exclusion area (within ACEC).</p> <p>Unavailable for private and/or commercial use of wood products.</p> <p>Recreational activities may be limited as necessary to maintain scenic and cultural landscape and meet VRM requirements.</p> <p>UAS use, takeoff, and landing within the ERMA by permit only.</p> <p>In collaboration with the BEC, Develop a RAMP for the ERMA within 5 years of issuance of this RMP/EIS.</p> <p>Solid human waste must be carried out and disposed of at appropriate facilities.</p> <p>Launching and landing of balloons requires an SRP.</p> <p>Goosenecks RMZ</p> <p>Acres: 96</p> <p>RMZ Objective</p> <p>Manage the Goosenecks RMZ in coordination with Utah State Parks to manage dispersed and developed camping recreation activities in the immediate area of Goosenecks State Park and protect the San Juan River viewshed.</p> <p>Manage the Goosenecks RMZ for frontcountry recreation settings and allow for recreation development that is consistent with the protection of BENM objects.</p> <p>RMZ Management Actions</p> <p>61 acres managed as VRM Class III.</p> <p>35 acres along canyon rims managed as VRM Class II.</p> <p>Dispersed camping closed in VRM Class II areas.</p> <p>Develop campground or designate dispersed campsites in VRM Class III area.</p>	<p>Goosenecks RMZ</p> <p>Acres: Same as Alternative B.</p> <p>RMZ Objectives</p> <p>Same as Alternative B.</p>	<p>Recreation management decisions from Alternative A and subsequent documents are included in Appendix E and would be carried forward until implementation-level planning is completed.</p> <p>The Goosenecks MZ area is not included within the Valley of the Gods MA and is not designated as an MZ.</p>	
<p>Per 2020 ROD/MMPs</p> <p>NFS Lands</p> <p>Arch Canyon Backcountry RMZ</p> <p>Desired future condition on NFS lands is described in Appendix I of the 2020 ROD/MMPs.</p> <p>ROS Class: Semi Primitive Non-Motorized (SPNM).</p> <p>Managed as an OHV closed area.</p> <p>Closed to mechanized use.</p> <p>Permitted use: Twelve-person limit on group size (individuals).</p> <p>Competitive events would not be allowed.</p> <p>SIO: High.</p> <p>If monitoring indicates significant impacts from dispersed camping on BENM objects, dispersed camping would be limited to designated areas only.</p>	<p>Recreation opportunities are available across a variety of settings that foster quality year-round developed and dispersed experiences, as well as motorized and non-motorized opportunities as described by the desired ROS. These settings reflect the integration of other resource values in a sustainable manner with the desired recreation opportunities, access, facilities, and infrastructure provided within those settings.</p> <p>ROS classes would be updated for NFS lands, as shown in Appendix E: Supporting Information for Recreation and Visitor Services Decisions.</p> <p>Desired Condition for each ROS class can be found in Appendix E: Supporting Information for Recreation and Visitor Services Decisions.</p> <p>The type and level of infrastructure, visitor services, and information are sustainable and consistent with the desired recreation opportunity spectrum settings.</p> <p>Recreation management activities at developed and dispersed recreation facilities should be consistent with desired ROS development levels.</p> <p>Primitive ROS Class</p> <p>If any areas are designated as USDA Forest Service recommended wilderness, they would be managed as a Primitive ROS class.</p> <p>Primitive ROS classes would be unsuitable for motorized use, and no roads or motorized trails would be designated within them.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Management zones described above apply to all NFS lands.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
	<p>Primitive ROS classes would be managed with an SIO of Very High.</p> <p>Primitive ROS classes would not be managed for mechanized use.</p> <p>Primitive ROS classes would not be managed for competitive events.</p> <p>Where monitoring indicates impacts from dispersed camping to BENM objects, dispersed camping would be limited to designated areas only in the Primitive ROS class area.</p> <p>SPNM ROS Class</p> <ul style="list-style-type: none"> • The SPNM class is not suitable for motorized use, and new roads and motorized trails would not be located within the SPNM classes. Existing roads and motorized trails in these classes would be considered for closure in travel planning. Competitive events would be prohibited within the SPNM ROS class. • Where monitoring indicates impacts from dispersed camping to BENM objects, dispersed camping would be limited to designated areas only in the SPNM ROS area. • SPNM ROS classes would not be managed for competitive events. <p>Semi-Primitive Motorized ROS Class</p> <ul style="list-style-type: none"> • Until analyzed in an implementation-level plan, dispersed camping on NFS lands would be allowed as reflected in the 1991 Manti-La Sal National Forest TMP/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map. After completion of an implementation-level recreation and/or travel plan, camping would be allowed in designated sites only. • After completion of an implementation-level camping plan, campfires would be allowed in designated sites only in SPM ROS classes. <p>Roaded Natural ROS Class</p> <ul style="list-style-type: none"> • Until analyzed in an implementation-level plan, dispersed camping on NFS lands in the Roaded Natural ROS class would be allowed as reflected in the Monticello Ranger District Motor Vehicle Use Map. After completion of an implementation-level recreation and/or travel plan, camping would be allowed in designated sites only. • Interpretive signage should be located along Roaded Natural road corridors unless required elsewhere to mitigate damage from recreational use. 			
<p>Per 2020 ROD/MMPs The Points RMZ Desired future condition on NFS lands is described in Appendix I of the 2020 ROD/MMPs. The Points would be managed as Backcountry Semi-Primitive Motorized. SIO: High. Until analyzed in an implementation-level plan, dispersed camping on NFS lands would be allowed as reflected in the 1991 Manti-La Sal National Forest TMP/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map. After completion of an implementation-level RAMP/business plan, camping would be allowed in designated sites only. After completion of an implementation-level camping plan, campfires would be allowed in designated sites only. Managed as an OHV limited area.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>2020 ROD/MMPs</p> <p>South Elks/Bears Ears RMZ</p> <p>Desired future condition on NFS lands is described in Appendix I of the 2020 ROD/MMPs.</p> <p>Recreation development in BENM on NFS lands would be focused here. The area provides an access point for adjacent Semi-Primitive Motorized setting found in The Points Semi-Primitive Motorized.</p> <p>This RMZ would be managed same as Trail of the Ancients above with following exceptions:</p> <p>ROS Class: Roaded Natural.</p> <p>Until analyzed in an implementation-level plan, dispersed camping on NFS lands would be allowed as reflected in the 1991 Manti-La Sal National Forest TMP/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map. After completion of an implementation-level RAMP/business plan, camping would be allowed in designated sites only.</p> <p>After completion of an implementation-level camping plan, campfires would be allowed in designated sites only.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>
<p>2020 ROD/MMPs</p> <p>Doll House RMZ</p> <p>No camping would be allowed in the RMZ.</p> <p>Human waste must be packed out.</p> <p>Campfires would not be allowed.</p> <p>Unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires.</p> <p>No people would be allowed inside or on top of structures.</p>	<p>Doll House RMZ</p> <p>No camping would be allowed in the RMZ.</p> <p>Unavailable for private and/or commercial use of wood products, including on-site collection of dead wood for campfires.</p> <p>Solid human waste must be packed out and disposed of at appropriate facilities.</p> <p>Campfires would not be allowed.</p> <p>Prohibit visitors inside or on top of archaeological structures.</p> <p>Pets and pack animals would not be allowed in the RMZ.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B with the following addition: No new SUPs would be issued to the Doll House MZ, and existing permits would not be renewed.</p>	<p>The agencies would collaborate with the BEC to ensure that management of Doll House site is consistent with Traditional Indigenous Knowledge and Tribal expertise.</p>
<p>Per 2020 ROD/MMPs</p> <p>NFS lands within the Shash Jaa Special Recreation Management Area (SRMA) and the recreation management zones (RMZs) noted in REC-15 would be managed with USDA Forest Service ROS categories.</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>
<p>Per 2008 Monticello RMP</p> <p>Manage recreation to meet Utah's rangeland health standards guided by the Standards for Public Land Health and Guidelines for Recreation Management (Appendix K of the 2008 Monticello RMP). The guidelines describe the procedures that should be applied to achieve standards for rangeland health within the recreation program.</p> <p>Recognize that various levels of regulations and limits are necessary. Restrictions and limitations on public uses should be as minimal as possible without compromising the primary goal.</p> <p>Use on-the-ground presence (e.g., BLM, site stewards, volunteers) as a tool to protect public lands.</p> <p>Limit or control activities where long-term damage by recreational uses is observed or anticipated through specialized management tools such as designated campsites, permits, area closures, and limitations on the number of users and duration of use. Revise RAMPs as necessary to maintain public land health.</p> <p>Coordinate with federal and state agencies, county and local governments, and Tribal Nations in recreation planning and managing traffic, search and rescue operations, trash control and removal, and public safety.</p>	<p>BMPs</p> <p>Manage recreation to protect BENM objects with the following actions:</p> <ul style="list-style-type: none"> Recognize that various levels of restrictions and limits are necessary. Restrictions and limitations on public uses would be as minimal as possible without compromising the protection of BENM objects. Place visitor use infrastructure near population centers, highway corridors, and high use areas. Provide restrooms and other facilities that would be adequate for anticipated uses at designated campgrounds, trailheads, and other areas where there is a concentration of recreational users. Limit or control activities where damage by recreational uses is observed or anticipated through specialized management tools such as site hardening, construction of developed campsites, barricades/fences, signs, and designated campsites. If necessary, agencies would require permits, implement area closures, or place limitations on the number of users and duration of use. Revise RAMPs as necessary to maintain public land health and safety. Use on-the-ground presence (agency staff, site stewards, volunteers) as a tool to protect public lands, with a priority on staffing visitor centers and developed sites. 	<p>BMPs</p> <p>Same as Alternative B with the following exceptions:</p> <ul style="list-style-type: none"> Recognize that various levels of restrictions and limits are necessary. Restrictions and limitations on public uses would be consistent with the protection of BENM objects. Place visitor use infrastructure near population centers, highway corridors, and high use areas. Provide restrooms and other facilities that would be adequate for anticipated uses at designated campgrounds, trailheads, and other areas where there is a concentration of recreational users. Limit or control activities where damage by recreational uses is observed or anticipated through specialized management tools such as permits, designated campsites, and limitations on the number of users and duration of use. If necessary, areas may be closed to recreational use. Revise RAMPs as necessary to maintain public land health and safety. Use on-the-ground presence (agency staff, site stewards, volunteers) as a tool to protect public lands with a priority on staffing visitor centers and permit compliance. Consider and, where appropriate, implement management methods to protect the resource, as well as maintain the quality of experience of the various user groups. These 	<p>BMPs from Alternative A carried forward until implementation-level planning is completed.</p>	<p>Manage recreation to protect BENM objects with the following actions:</p> <ul style="list-style-type: none"> Limit or control activities where damage by recreational uses is observed or anticipated through specialized management tools such as physical barriers, signs, and designated campsite areas. If necessary, agencies would require permits (e.g., ISRPs or RUPs) or fees, implement area closures, or place limitations on the number of users and duration of use. Commercial and private use allocations would be adaptive to ensure protection of BENM objects. In collaboration with the BEC, agencies would develop a Monument permit system, as necessary, to include user education about the Monument's cultural landscape, the rules and regulations of the Monument, and where users are subject to penalties and fines for permit violations. The following additional permits would apply: <ul style="list-style-type: none"> Permits would be required for private overnight and day use in all canyons. Unless otherwise provided in this RMP/EIS, the following group size limits would remain in effect until implementation-level management plans are developed for management zones:

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Consider and, where appropriate, implement management methods to protect the resource, as well as maintain the quality of experience of the various user groups. These methods could include limitation of numbers, types, timing, and duration of use.</p> <p>Encourage the location of public land recreational activities near population centers and highway corridors by placement of appropriate visitor-use infrastructure. Provide restrooms and other facilities that would be adequate for anticipated uses at designated campgrounds, trailheads, and other areas where there is a concentration of recreational users. Emphasize Leave No Trace camping and travel techniques throughout the Monticello PA.</p> <p>Consider and, where appropriate, implement management methods to protect natural and cultural resources and, while giving consideration to community and economic impacts, implement management methods to maintain or enhance recreation opportunities. Management methods may include limitation of visitor numbers, camping and travel controls, implementation of fees, alteration of when use takes place, and other similar actions as they are approved through normal BLM procedures.</p> <p>Coordinate management of recreation use with other agencies, state and local governments, and Tribal units to provide public benefits, help assure public safety, and make effective use of staff and budget resources.</p> <p>Recreational OHV and mechanized travel would be consistent with route and area designations described in the travel management decisions. The BLM would work with agency and government officials and permit holders to develop procedures, protocols, permits, or other types of authorization, as appropriate, to provide reasonable access for non-recreational use of OHVs for military, search and rescue, emergency, administrative, and permitted uses.</p> <p>OHV access for game retrieval would follow all area and route designations. (There would be no off-road retrieval.)</p> <p>Dispersed camping, where allowed when not specifically restricted, may be closed seasonally or as impacts or environmental conditions warrant.</p>	<ul style="list-style-type: none"> • Coordinate with the BEC, Tribal Nations, federal and state agencies, and county and local governments in recreation planning and managing traffic, search and rescue operations, trash control and removal, and public safety. • Consider utilizing management methods, including construction of trailheads or facilities, and if necessary, limitation of numbers, types, timing, and duration of use where necessary to protect natural and cultural resources and maintain the quality of experience of various user groups. • Emphasize Leave No Trace, Tread Lightly and Visit with Respect visitation, camping, and travel techniques throughout BENM. • Coordinate on the management of recreation use with the BEC, Tribal Nations, other agencies, and state and local governments to provide public benefits, help assure public safety, and make effective use of staff and budget resources. • OHV access for game retrieval would follow all area and route designations. There would be no cross-country OHV retrieval. • Dispersed camping may be closed seasonally or as impacts or environmental conditions warrant. 	<p>methods could include creating allocated permit systems that specify types, timing, and duration of use.</p>		<ul style="list-style-type: none"> ○ Day use group size (private and commercial) would be limited to 15 people. ○ Overnight group size (private and commercial) would be limited to eight people. Coordinate with the BEC, Tribal Nations, federal and state agencies, and county and local governments in recreation planning and managing traffic, search and rescue planning/operations, trash control and removal, and public safety. BEC involvement in these activities would be primarily to advise on the proper care and management of Monument objects impacted by recreation, traffic, and trash control and removal. • Consider using management methods, including development of trailheads or facilities, and, if necessary, limitations of numbers, types, timing, and duration of use where necessary to protect natural and cultural resources and maintain the quality of experience of various user groups. (Same as Alternative B.) • Emphasize Leave No Trace, Tread Lightly, and Visit with Respect visitation, camping, and travel techniques throughout BENM. (Same as Alternative B.) • Coordinate management of recreation use with the BEC, Tribal Nations, other agencies, and state and local governments to provide public benefits, help assure public safety, and make effective use of staff and budget resources. • OHV access for game retrieval would follow all area and route designations. There would be no off-road OHV retrieval. (Same as Alternative B.) • Dispersed camping: <ul style="list-style-type: none"> ○ The agencies would inventory and monitor dispersed camping. ○ No dispersed camping would be allowing within 0.25 mile of surface water, unless in an existing or designated campsite or area. ○ No dispersed camping would be allowed within 0.25 mile of a developed campground. ○ The agencies, working collaboratively with the BEC, would designate campsites and areas to help guide and focus visitors to appropriate places. The designated campsites and areas would be designed to protect Monument objects, including cultural resources, wildlife, and water resources, as informed by Traditional Indigenous Knowledge. ○ The agencies, working collaboratively with the BEC, would identify areas that are available to dispersed camping and areas that are unavailable to dispersed camping. ○ The agencies, working collaboratively with the BEC, would remove and reclaim existing campsites and areas, as necessary, to protect Monument objects, including cultural resources, wildlife, and water resources, as informed by Traditional Indigenous Knowledge. • Cross-country hiking: <ul style="list-style-type: none"> ○ The public would be encouraged to stay on trails when hiking in the Monument. ○ The agencies would inventory existing and designated hiking trails in the Monument. ○ The agencies, working collaboratively with the BEC, would designate individual trails and/or a hiking trail system to help guide and focus visitors to culturally appropriate places. The trails would be designed to protect Monument objects, including cultural resources

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
				<p>and wildlife, and would be informed by Traditional Indigenous Knowledge.</p> <ul style="list-style-type: none"> ○ To the extent practicable, the agencies would seek input from the MAC and state, local, and Tribal Nations on trail designation. ○ The agencies, working collaboratively with the BEC, would identify whether specific areas need to be closed to cross-country hiking to protect Monument objects, including cultural resources and wildlife, as informed by Traditional Indigenous Knowledge. ○ Within 1 year of the issuance of the record of decision, the agencies, working collaboratively with the BEC, would develop a tribal interpretation plan for recreational visitors (as described in another part of the alternative). The work to prepare the interpretive plan and the trail system would inform both efforts. <p>Place visitor use infrastructure near population centers, highway corridors, and high use areas. Provide limited restrooms and other facilities at designated campgrounds, trailheads, and other areas where there is a concentration of recreational users. Major developments such as visitor centers and developed camping areas would be located on the periphery of the Monument and in or near local communities.</p> <p>Use on-the-ground presence (agencies, Tribal ranger programs, site stewards, volunteers) as a tool to protect public lands, protect BENM objects, and provide visitor education regarding the proper care and stewardship of the cultural landscape. Collaborate with Tribal Nations to engage and, where feasible and in accordance with applicable law, contract Tribal site stewards and volunteers to assist with public engagement</p>
<p>Per 2020 ROD/MMPs No camping allowed within 200 feet of isolated springs or water sources to allow wildlife and livestock access to water. Discourage dispersed camping in riparian areas functional-at risk if camping is determined to be the causal factor.</p>	<p>No camping within 200 feet of springs and water improvements, unless in designated areas, to allow space for wildlife and livestock to access water.</p>	<p>Same as Alternative B.</p>	<p>No camping within 0.25 mile of springs and water improvements, unless in designated sites, to allow space for wildlife and livestock to access water.</p>	<p>No dispersed camping would be allowed within 0.25 mile of surface water, unless in an existing or designated campsite or area.</p>
<p>Per 2008 Monticello RMP General Recreation Management The following actions require a signed agreement with the specified agency:</p> <ul style="list-style-type: none"> • Manage the BLM portion of the Colorado River in coordination with Canyonlands National Park and the BLM Moab FO. • Manage the BLM portion of the San Juan River in coordination with the Glen Canyon NRA and Navajo Nation. • Manage the BLM portion of Dark Canyon Complex in coordination with the Manti-La Sal National Forest and Glen Canyon NRA. 	<p>Management carried forward through agreements.</p>	<p>Management carried forward through agreements.</p>	<p>Management carried forward through agreements.</p>	<p>General Recreation Management Partner with agencies, organizations, and Tribes that manage and/or monitor up- or downstream portions of the Colorado River, including but not limited to Tribal Nations, Canyonlands National Park, and the BLM Moab FO to manage the portion of the Colorado River that is in the Monument. Partner with agencies, organizations, and Tribes that manage and/or monitor up- or downstream portions of the San Juan River, including but not limited to Tribal Nations and Glen Canyon NRA, to manage the portion of the San Juan River that passes through the Monument. Manage Dark Canyon in coordination with the Glen Canyon NRA.</p>
<p>Per 2008 Monticello RMP General Recreation Management REC-12 Benefits Based Management Goals and Objectives have been written for most SRMAs (Appendix K of the 2008 Monticello RMP). REC-13 No camping within 200 feet of isolated springs to allow space for wildlife to access water. REC-14</p>	<p>Management not carried forward. Addressed specifically in the recreation management areas (RMAs). Management not carried forward. See Section 2.4.6, Water Resources, and Section 2.4.14, Cultural Resources.</p>	<p>Management not carried forward. Addressed specifically in the RMAs. Management not carried forward. See Section 2.4.6, Water Resources, and Section 2.4.14, Cultural Resources.</p>	<p>Management not carried forward. Addressed specifically in the MAs. Management not carried forward. See Section 2.4.6, Water Resources, and Section 2.4.14, Cultural Resources.</p>	<p>Management not carried forward. Addressed specifically in the RMAs. Management not carried forward. See Section 2.4.6, Water Resources, and Section 2.4.14, Cultural Resources.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
No camping is allowed within cultural sites or archaeological resources as defined in ARPA.				
<p>Per 2020 ROD/MMPs</p> <p>Camping fees would be charged if deemed necessary to provide facilities and services. ISRPs (BLM) and SUPs (USDA Forest Service) for private, non-commercial special area use would be required following current Federal Lands Enhancement Modernization Act authority and agency permit and fee administration policy. SRPs would be required for Moon House, the Mule Canyon WSA (in canyon), Butler Wash hiking, and Lower Fish Creek.</p>	<p>Management not carried forward. Addressed specifically in the RMAs and USDA Forest Service units.</p>	<p>Management not carried forward. Addressed specifically in the RMAs and USDA Forest Service units.</p>	<p>Management not carried forward. Addressed specifically in the MAs and USDA Forest Service units.</p>	<p>Camping fees would be charged if deemed necessary to provide facilities and services. ISRPs (BLM) and SUPs (USDA Forest Service) for private, non-commercial special area use would be required in accordance with the Federal Lands Recreation Enhancement Act and agency policy.</p>
<p>Per 2020 ROD/MMPs</p> <p>An implementation-level RAMP/business plan would be developed for BENM within 3 years following the CRMP. This implementation-level plan would restrict camping to designated sites if the following criteria apply:</p> <ul style="list-style-type: none"> • There are conflicting resource impacts that cannot be mitigated (e.g., cultural resources, visual, wildlife impacts). • There are recurring issues with human waste, trash, campfires, and expanded disturbance that are best addressed through additional management. 	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.20.2).</p>
<p>Per 1986 Manti-La Sal LRMP</p> <p>NFS Lands</p> <p>Dispersed Recreation Management</p> <p>Describe, as appropriate, high interest or unique geological, paleontological, biological, archaeological, or historical features for public information and, as appropriate, develop interpretive information for these sites.</p> <p>Provide opportunities for Roaded Natural Appearing, Semi-Primitive Motorized, and Semi-Primitive Non-Motorized recreation uses.</p> <p>Classify areas as to whether vehicular travel use is restricted.</p> <p>Specify vehicular travels restrictions, if any, based on vehicle travel use management (Forest Service Manual 2350).</p> <p>Restrict use and/or rehabilitate dispersed sites where unacceptable environmental damage is occurring.</p> <p>Close sites that cannot be maintained in Code-A- Site categories Light, Moderate, or Heavy campsite condition. (USDA Forest Service Research Paper PNW-209, 1976).</p> <p>Rehabilitate sites that are in Code-A-Site category Extreme.</p> <p>Limit camping near lakes and streams or in watersheds as necessary to protect riparian and aquatic ecosystems and to maintain the quality of the recreation experience.</p> <p>Manage dispersed recreation activities and use of trails in dispersed areas to not exceed the established People At One Time (PAOT)/acre or mile of site or trail capacity.</p> <p>Maximum use and capacity levels are by:</p> <p>Undeveloped Motorized Recreation Sites (UDM)</p> <ul style="list-style-type: none"> • Emphasize Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural recreation opportunities. • Close specific land areas or travel routes either permanently or seasonally to maintain compatibility with adjacent area management or to prevent resource damage, for economic reasons, to prevent conflicts of use, and provide for user health and safety. • Manage motorized vehicle use (including snowmobiles) on and off Forest Development Roads and trails. 	<p>Agencies would:</p> <ul style="list-style-type: none"> • Collaborate with the BEC to develop an interpretation plan, with an emphasis on on-site interpretation. Highlight Tribal Nations' connections to distant areas visible in BENM; culturally important plants; culturally important vantage points; high interest or unique geological, paleontological, biological, archaeological, or historical features for public information; and, as appropriate, develop interpretive information for these sites. • For NFS lands, see also management for ROS. • Management related to established People At One Time/acre or mile not carried forward. • The management areas from the 1986 Manti-La Sal LRMP would not be carried forward. 	<p>Same as Alternative B, except that on BLM-administered lands, on-site interpretation would mostly be confined to cultural sites allocated for Public Use (Developed) and the Sand Island RMZ, Trail of the Ancients RMZ, Indian Creek Corridor RMZ, Bicentennial Highway RMZ, and Goosenecks RMZ. On NFS lands, this would be applied to Roaded Natural and Semi-Primitive Motorized.</p> <p>Interpretation in other areas without recreational development and/or motorized access would be off-site interpretation unless on-site guidance is required to address impacts to BENM objects. For NFS lands, this would apply to Semi-Primitive Non-Motorized and Primitive.</p>	<p>Same as Alternative C.</p>	<p>Agencies would collaborate with the BEC to develop an interpretation plan for recreational visitors to the Monument, with an emphasis on on-site interpretation in Front Country and Passage Zones. Highlight BEC Tribal Nations' connections to distant areas visible in BENM; culturally important plants; culturally important vantage points; high interest or unique geological, paleontological, biological, archaeological, or historical features for public information; and, as appropriate, develop interpretive information for these sites.</p> <p>The interpretation plan would comply with implementation plans associated with the RMP/EIS.</p> <p>Interpretation in Outback and Remote Zones would be off-site interpretation unless on-site guidance is required to address impacts to BENM objects.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> • Provide facilities, as appropriate, including Development Level 1 or 2 campgrounds. Trailheads, local roads, parking lots, and signing may also be provided. <p>Semi-primitive Recreation Use (SPR)</p> <ul style="list-style-type: none"> • Manage for semi-primitive recreation opportunities. • Close all or part of the unit to motorized use when such use is incompatible with the recreation resource activities and or uses of the unit. • Open specific closed areas to travel routes seasonally as appropriate with specific authorization to accomplish resource management activities and/or uses. Close or restrict. • Open the unit or selected roads and/or trails for motorized use recreation when such use is compatible with the ROS Class of the unit. • Closure or restriction to motorized use does not apply when authorized by permit or contract or to any federal, state, or local officer, or member of an organized rescue or fire fighting force in the performance of an official duty. • Provide facilities such as foot and horse trails, Level 1 campgrounds, and necessary signing as appropriate for the protection of resources. • Manage site use and occupancy to maintain sites so as not to exceed Code-A-Site category "Heavy Impact." <p>Key Big-Game Winter Range (KWR)</p> <ul style="list-style-type: none"> • Manage recreational activities so they do not conflict with wildlife use of habitat. • Close management units to vehicular travel and to snowmobile use during the critical use season. • Do not provide parking or trailhead facilities during winter. <p>General Big-Game Winter Range (GWR)</p> <ul style="list-style-type: none"> • Manage recreational activities so they do not conflict with wildlife use of habitat. • Restrict snowmobile use to designated routes if conflicts with wintering animals occur. • Restrict vehicular travel on non-roaded areas if conflicts with habitat needs develop. • Production of Forage (RNG) and Wood-fiber Production and Harvest (TBR) and Riparian Area Management Not-Mapped (RPN) • Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, and Rural recreation opportunities may be provided. <p>Wood-fiber Production and Harvest (TBR)</p> <ul style="list-style-type: none"> • Prohibit recreation use (e.g., snowmobiles, vehicular travel, cross-county skiing) where needed to protect forest plantations. <p>Municipal Water Supply (MWS)</p> <ul style="list-style-type: none"> • Close all or portions of the unit to vehicular travel except as authorized. • Allow light dispersed recreation, such as hiking, but not overnight camping. • Require compliance with the "Pack In, Pack Out" policy. <p>Watershed Protection/Improvement (WPE)</p> <ul style="list-style-type: none"> • Provide for current recreation uses that do not conflict with watershed improvement objectives. • Close treated or proposed watershed improvement areas to vehicular travel (except over snow). • Close to motorized vehicles as needed. 				

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> On units where structural watershed improvements have been made, vehicular travel use would be restricted (except over-snow travel). Manage dispersed recreation opportunities: On potential MMA units consistent or compatible with prescriptions from adjacent management units. On existing MMA units to avoid conflicts with mineral activities and provide for public safety. <p>Riparian Area Management Not-Mapped (RPN) and Research, Protection, and Interpretation of Lands and Resources (RPI)</p> <ul style="list-style-type: none"> Semi-Primitive NON-motorized, Semi-Primitive Motorized, Roded Natural, and Rural recreation opportunities may be provided. Prohibit or restrict motorized vehicle use as appropriate. Limit or restrict camping in existing or proposed units as necessary. Provide, as appropriate, signing for interpretation and protection of specific special interest areas. <p>Dark Canyon Wilderness Management (DCW)</p> <ul style="list-style-type: none"> Emphasize primitive recreation opportunities for isolation, solitude, and self-reliance. Manage use to provide a low incidence of contact with other groups or individuals and to prevent unacceptable changes to the biophysical resources. Use and capacity levels are as follows: <ul style="list-style-type: none"> Trail encounters are usually less than six other parties per day. Campsite encounters are usually less than three other parties per day. Restrict use on and/or rehabilitate dispersed sites where unacceptable environmental damage is occurring. Close sites that cannot be maintained in Code-A-Site categories Light to Moderate. 				
<p>Per 1986 Manti-La Sal LRMP</p> <p>Location of Utility Corridors (UC)</p> <p>Manage dispersed recreation opportunities to avoid conflicts with the permitted uses of the unit.</p> <p>Restrict vehicular travel as appropriate.</p> <p>Production of Forage (RNG)</p> <p>Temporarily close dispersed area camping sites to recreation use where resource damage is occurring or management of livestock is seriously impaired.</p> <p>Where soil erosion and/or compaction inhibits plant growth and ground cover is less than 30%.</p> <p>Where dispersed camping prevents livestock watering and/or range use.</p> <p>Riparian Area Management Not-Mapped (RPN)</p> <p>Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roded Natural, and Rural recreation opportunities may be provided.</p> <p>Limit use where the riparian area is being unacceptably damaged.</p>	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
See RMA management.	Solid human waste would be required to be carried out only in those specific areas where applicable, as noted in this RMP/EIS.	Same as Alternative B.	Same as Alternative E.	All visitors to the Monument would be encouraged to practice Leave No Trace principles. The agencies, working collaboratively with the BEC, would monitor impacts from solid human waste to identify whether solid human waste removal needs to be required in any specific areas to protect

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
				Monument objects, including cultural resources and wildlife, as informed by Traditional Indigenous Knowledge.
<p>Per 2008 Monticello RMP Management of Existing and Development of Future Recreation Facilities</p> <p>REC-5 Existing developed recreation sites would be maintained. New sites/facilities/trails would be developed in response to user demand, amenity value, and critical resource protection needs.</p> <p>REC-10 Grazing is excluded from developed recreation sites.</p> <p>REC-11 Developed recreation facilities are unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires.</p>	<p>Developed recreation facilities may be closed seasonally to allow for resource rest and/or traditional uses or ceremonies. These seasonal closures would be identified in collaboration with the BEC and Tribal Nations.</p> <p>REC-10 Grazing is excluded from developed recreation facilities, which includes developed campgrounds, developed trailheads, and cultural sites that are Public Use (Developed). See also Section 2.4.22, Livestock Grazing.</p> <p>REC-11 Same as Alternative A.</p> <p>REC-5 Existing developed recreation facilities would be maintained, and new recreation facilities would be developed to address visitor impacts, and protect BENM objects.</p>	<p>Recreation facilities may be closed seasonally to allow for resource rest and/or traditional uses or ceremonies. These seasonal closures would be identified in collaboration with the BEC and Tribal Nations and, where applicable, managed through permit systems.</p> <p>REC-10 Same as Alternative B.</p> <p>REC-11 Same as Alternative A.</p> <p>REC-5 Existing developed recreation facilities would be maintained. New recreation facilities would be developed only in cultural sites allocated for Public Use (Developed) and the Sand Island RMZ, Trail of the Ancients RMZ, Indian Creek Corridor RMZ, Bicentennial Highway RMZ, and Goosenecks RMZ. On NFS lands, this would be applied to Roaded Natural and Semi-Primitive Motorized areas to protect BENM objects.</p>	<p>REC-10 Same as Alternative B.</p> <p>REC-5 Same as Alternative A until implementation-level planning is completed.</p> <p>REC-11 Same as Alternative A until implementation-level planning is completed.</p>	<p>Grazing is excluded from developed recreation facilities, which includes developed campgrounds, developed trailheads, and cultural sites that are Public Use (Developed). See also Section 2.4.22, Livestock Grazing.</p> <p>Developed recreation facilities are unavailable for private and/or commercial use of wood products, including on-site collection of dead wood for campfires.</p> <p>Existing developed recreation facilities would be maintained as needed to address visitor impacts and critical resource protection needs. Developed recreation facilities would be removed if inconsistent with the protection of BENM objects. In collaboration with the BEC, new recreation facilities would be developed only in Front Country and Passage Zones as necessary to protect BENM objects.</p>
<p>Per 2008 Monticello RMP Continue existing reservations issued to the BLM for all existing developed recreation sites and facilities. Issue similar protective reservations for all new recreation facilities.</p>	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
<p>Per 2008 Monticello RMP Management of Existing and Development of Future Recreation Facilities</p> <p>Develop or improve development of recreation sites as prioritized below:</p> <ul style="list-style-type: none"> • Kane Gulch Ranger Station (40 acres) • Sand Island Campground (21 acres) • Mexican Hat launch site (20 acres) • Hamburger Rock Campground (20 acres) • Comb Wash Campground (10 acres) • Butler Wash Ruins (60 acres) • Mule Canyon Indian Ruin (10 acres) • Three Kiva Pueblo (10 acres) • Shay Mountain Vista Campground (20 acres) • Indian Creek Recreational and Camping Facilities as outlined in the Indian Creek Recreation Corridor Plan (BLM 2005b). • The BLM would work with Natural Bridges National Monument to develop an overflow camping area. No campfires would be allowed in overflow camping areas. • The BLM would work with Canyonlands National Park Needles District to develop an overflow camping area. <p>Per 1986 Manti-La Sal LRMP NFS Lands Management of Developed Recreation Sites Manage sites identified for developed recreation during the planning period under the Developed Recreation Site (DRS) management unit prescription. Construct, reconstruct, and maintain developed sites in accordance with the established ROS classification for the management unit. Site Development Scale by ROS Class: • Semi-Primitive Motorized: Not to exceed 2</p>	<p>Seasonal closures of recreational facilities would be considered to allow for resource rest and/or traditional uses or ceremonies. These seasonal closures would be identified in collaboration with the BEC and Tribal Nations.</p> <p>For recreation facilities, agencies would implement the following management:</p> <ul style="list-style-type: none"> • Provide for universal accessibility to the extent practicable and consistent with the protection of BENM objects and desired recreation settings. • Evaluate specific flood hazards within identified 100-year floodplains. • Provide for site protection, efficient maintenance, and user convenience. • Design and develop sites to ensure that developed capacity meets the anticipated demand, where appropriate. • If developed recreation facilities are needed to manage wilderness, USDA Forest Service recommended wilderness, WSAs, lands managed to protect wilderness characteristics, and suitable WSRs to complement wilderness management objectives, ensure those sites are external to those areas, unless necessary to the protection of BENM objects and are otherwise consistent with applicable law and agency policy. • Restrict uses that cause noise levels that create a public nuisance and are inconsistent with desired recreation experience. Preclude camping in undeveloped sites within 0.25 mile of developed fee sites within BENM <p>REC-15 Collaborate with the BEC to develop, maintain, or improve the following recreation sites to encourage visitor stewardship and to support protection of BENM objects:</p> <ul style="list-style-type: none"> • BENM education center near Kigalia Guard Station • Doll House • Dry Wash Caves 	Same as Alternative B.	<p>Existing facilities (see Appendix E) would be maintained at their current level until implementation-level or site-specific planning is completed. New facilities would only be developed if specifically necessary to protect BENM objects. Levels of maintenance or improvement for existing facilities would also be determined in implementation-level plans. Facilities that do not serve an administrative, resource protection, public education, or public safety purpose would be removed. All facilities would be appropriate to the desired Recreation Settings Characteristics for that location.</p>	<p>Seasonal closures of these facilities would be considered to allow for resource rest and/or traditional uses or ceremonies. These seasonal closures would be identified in collaboration with the BEC and Tribal Nations.</p> <p>For recreation facilities, agencies and the BEC would implement the following management:</p> <ul style="list-style-type: none"> • Provide for universal accessibility (i.e., inclusion of indigenous languages in exhibits and ADA accessibility, as applicable) to the extent practicable and consistent with the protection of BENM objects. • Evaluate specific flood hazards within identified 100-year floodplains. • No new developed recreation facilities in Outback or Remote Zones. <p>Restrict uses that cause noise levels that create a public nuisance and are inconsistent with future implementation-level plans (e.g., cultural, night skies, soundscapes). Dispersed camping areas would not be designated within 0.25 mile of developed fee camping areas within BENM.</p> <p>Develop, maintain, or improve the following recreation sites to encourage visitor stewardship and to support protection of BENM objects, in collaboration with the BEC and consistent with all implementation plans:</p> <ul style="list-style-type: none"> • Dry Wash Caves • Kane Gulch Ranger Station (40 acres) • Sand Island Campground (21 acres) • Newspaper Rock Interpretive Site <p>Existing recreation sites would be maintained to protect BENM objects.</p> <p>Subject to applicable law and valid existing rights, the BLM and USDA Forest Service would remove recreation facilities that do not serve an administrative, public safety, recreational, cultural, or historic purpose or that do not provide for the protection of BENM objects.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> Roaded Natural: Class 3 <p>Maintain facilities in safe condition. Replace facilities when rehabilitation costs are limit percent or more of replacement costs or existing facilities cease to be compatible with site design or ROS classification.</p> <p>Maintain developed sites in accordance with regionally acceptable work standards.</p> <p>Recreation Site Construction and Rehabilitation</p> <ul style="list-style-type: none"> Developed Recreation Sites (DRS) <ul style="list-style-type: none"> Develop appropriate facilities where the present facilities are not meeting the demand and where facilities meet the highest net public benefit. Provide facilities that are accessible to disabled persons in proportion to the anticipated number of users with disabilities. Facilities proposed for construction or reconstruction that lie within identified 100-year floodplains would be evaluated as to the specific flood hazards and values involved with the unit. Design facilities and access to provide site protection, efficient maintenance, and user convenience. Design and develop sites to ensure that developed capacity meets the anticipated demand. Construct and reconstruct existing and new developed sites in accordance with the guidelines in Forest Service Manual 2331. Design, construct, and operate developed sites which are adjacent to or provide access point into a wilderness to complement wilderness management objectives. Undeveloped Motorized Recreation Sites (UDM) <ul style="list-style-type: none"> Inventory dispersed sites as potential developed recreation sites, and, as appropriate, reclassify as Developed Recreation Site (DRS) management units when substantial demand exists and based on an orderly development program. 	<ul style="list-style-type: none"> Lewis Lodge Overlook Trail Kane Gulch Ranger Station (40 acres) Sand Island Campground (21 acres) Hamburger Rock Campground (20 acres) Comb Wash Campground (10 acres) Butler Wash Interpretive Trail (60 acres) Mule Canyon Interpretive Site (10 acres) Shay Mountain Vista Campground (20 acres) Newspaper Rock Interpretive Site Donnelly Canyon Day Use Area North Cottonwood Trailhead Bridger Jack Mesa Dispersed Area Superbowl Campground and Group Site Creek Pasture Campground and Group Site Indian Creek Falls Group Sites OHV staging areas (Falls Missile and White Canyon) Grand Flat Campground Muley Point/Moki Dugway Swinging Bridge River Access Needles Overlook Anticline Overlook Bluff River Trail Pedestrian Trailheads Climbing Access Points Motorized Trailheads <p>Additional facilities could be developed to protect BENM objects. Subject to applicable law and valid existing rights, the BLM and USDA Forest Service would remove recreation facilities that do not serve an administrative, public safety, recreational, cultural, or historic purpose or that do not provide for the protection of BENM objects.</p>			
<p>Per 1986 Manti-La Sai LRMP</p> <p>Research, Protection, and Interpretation of Lands and Resources (RPI)</p> <p>Permit, as appropriate, construction of developed recreation or interpretive facilities.</p> <p>Preclude camping in undeveloped sites within 0.25 mile of developed fee sites, where appropriate.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>	<p>Management not carried forward.</p>
<p>Per 2020 ROD/MMPs</p> <p>Development of hiking paths and trails would be allowed if consistent with maintaining BENM objects. As part of site-specific implementation-level travel planning, redundant hiking trails and social trails would be closed and reclaimed.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>Development of hiking paths and trails would be allowed if consistent with the protection of BENM objects and in collaboration with the BEC. When new hiking trails are designated, redundant hiking trails and social trails would be closed and reclaimed unless consistent with the protection of BENM objects.</p>
<p>Per 2008 Monticello RMP</p> <p>SRPs and Special Use Permits (SUPs)</p> <p>REC-17</p> <p>SRPs would be issued as a discretionary action as a means to help meet management objectives, control visitor use, protect recreational and natural resources, and provide for the health and safety of visitors.</p> <p>REC-18</p> <p>All SRPs would contain standard stipulations appropriate for the type of activity and may include additional stipulations (Appendix K of the 2008 Monticello RMP) necessary to</p>	<p>SRPs and SUPs would be used to manage different types of recreation associated with commercial uses, competitive events, organized groups, vending, and special areas. These recreation uses can include, for example, large group events, river guide services, and commercial recreation activities.</p> <p>SRPs and SUPs would be issued as a discretionary action to help meet management objectives; control visitor use; protect BENM objects; and provide for the health and safety of visitors.</p> <p>Agencies would collaborate with the BEC to educate SRP and SUP holders and participants about the cultural history of BENM and site visitor etiquette and BENM users about stewardship, interpretation, and education about cultural</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>SRPs and SUPs would be used to manage different types of recreation associated with commercial uses, organized groups, and special areas. There would be no vending in BENM. All SRPs would only be allowed if they are consistent with the protection of BENM objects. Recreation uses can include, for example, group events, river guide services, and commercial recreation activities.</p> <p>Agencies would collaborate with the BEC to educate SRP and SUP holders and participants about the cultural history of BENM and visitor etiquette and BENM users about stewardship, interpretation, and education about cultural resources and ways to respectfully interact with the Monument. In collaboration with the BEC, agency-provided</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>protect lands or resources, reduce user conflicts, or minimize health and safety concerns.</p> <p>REC-19 SRPs would be used to manage different types of recreation associated with commercial uses, competitive events, organized groups, vending, and special areas. These recreation uses can include, for example, large group events, river guide services, and commercial recreation activities.</p> <p>REC-20 The BLM would follow the 43 CFR 2930 national guidelines on cost recovery (67 <i>Federal Register</i>, October 1, 2002), and the Utah SRP Cost Recovery Policy (Utah IM 2004-036).</p> <p>REC-21 In accordance with the BLM's Priorities for Recreation and Visitor Services Work Plan (May 2003, as amended), commercial SRPs would also be issued as a mechanism to provide a fair return for the commercial use of public lands. Per 1986 Manti-La Sal LRMP Semi-primitive Recreation Use (SPR) Permit special uses that are complementary and compatible with the objectives of the management unit and which do not change the ROS classification. Act on special use applications according to the following priorities:</p> <ul style="list-style-type: none"> • Public service operations catering to the general public. • Group type operations • Private type operations (Forest Service Manual 2340 and Forest Service Manual 2720). • An application for permit may be denied if the authorizing officer determines that <ul style="list-style-type: none"> ○ the proposed use would be inconsistent or incompatible with the purpose(s) for which the lands are managed, or with other uses; or ○ the proposed use would not be in the public interest; or ○ the applicant is not qualified; or ○ the use would be inconsistent with applicable federal and/or state laws; or ○ the applicant does not or cannot demonstrate technical or financial capability. <p>Dark Canyon Wilderness Management (DCW)</p> <ul style="list-style-type: none"> • Manage outfitter-guide operations in harmony with activities of non-guided visitors and include them in calculations of level-of-use capacities. Permit camping only in sites specified in outfitter-guide permits. 	<p>resources. In collaboration with the BEC, agency-provided training would be required for all SRP/SUP-authorized guides. Limits on user days and/or numbers of permits would be established for SRPs and SUPs in implementation-level planning.</p> <p>All SRPs and SUPs would contain standard stipulations appropriate for the type of activity and would include stipulations necessary to protect BENM objects; reduce user conflicts; or minimize health and safety concerns. Stipulations would be developed in collaboration with the BEC and consistent with protecting BENM objects.</p> <p>Rec-20 Not carried forward.</p> <p>Rec -21 Not carried forward.</p> <p>Semi-Primitive Recreation Use management is not carried forward.</p>			<p>training and certification, including cultural sensitivity training, would be required for all SRP/SUP-authorized guides. Limits on user days and/or numbers of permits issued for BENM, length of permits, number of participants, and appropriate seasons and use areas would be established for SRPs and SUPs in implementation-level planning in collaboration with the BEC.</p> <p>All SRPs and SUPs would contain standard stipulations appropriate for the type of activity and would include stipulations necessary to protect BENM objects, reduce user conflicts, minimize health and safety concerns, and encourage respectful visitation within the Monument. Stipulations would be developed in collaboration with the BEC and consistent with protecting BENM objects.</p>
<p>Per 2008 Monticello RMP Criteria for Requiring an SRP REC-22 The criteria for requiring an SRP include the following:</p> <ul style="list-style-type: none"> • Any commercial use. • Non-mechanized/non-stock day use organized group or event of more than 50 people in an extensive recreation management area (ERMA). • Non-mechanized/non-stock overnight with group or event of more than 25 people in an ERMA. • More than 25 motorized vehicles/OHVs on designated routes (does not include County B roads or state and federal highways). 	<p>Management not carried forward. If needed, SRP thresholds would be developed in implementation-level plans.</p>	<p>Management not carried forward. If needed, SRP thresholds would be developed in implementation-level plans.</p>	<p>Management not carried forward. If needed, SRP thresholds would be developed in implementation-level plans.</p>	<p>The criteria for requiring an SRP include the following (except where stated in RMAs or ROS):</p> <ul style="list-style-type: none"> • Any commercial use or competitive events. • Non-mechanized/non-stock day use organized group or event of more than 15 people. • Non-mechanized/non-stock overnight with a group or event of more than 10 people, unless in a group site. • Any riding or pack animal use • Car camping with more than five vehicles or more than 10 people. • Group events with the potential for user conflict. • Any individual use that might impact Monument objects.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E									
<ul style="list-style-type: none"> • More than 25 non-motorized mechanized vehicles on designated routes (does not include County B roads or state and federal highways). • A group size of more than 15 riding and/or pack animals. • Car camping with more than 15 vehicles or more than 50 people. • Activities or events with the potential to conflict with existing resource management guidelines/prescriptions. • Events with the potential for user conflict. • Events that could impact public health and safety. 													
<p>Per 2020 ROD/MMPs In addition to current BLM and USDA Forest Service policies for evaluating whether an SRP/SUP is required for organized group events and activities, the criteria in Table 6 of the 2020 ROD/MMPs would be considered to determine if an SRP/SUP is required or if a letter of agreement (BLM) or a non-commercial group SUP (USDA Forest Service) is more appropriate. In those cases where the appropriate criteria are met, a letter of agreement from the Authorized Officer (BLM) would be used to document the decision to allow that activity. Group size thresholds for SRPs do not represent group size limits; rather, they represent a threshold at which an SRP or letter of agreement would be required. The BLM also has the discretion to deny SRP applications if they deem that those SRPs would not be consistent with proper care and management of BENM objects.</p> <p>Table 5 (6). Organized Group Event/Activity Evaluation Matrix</p> <table border="1"> <thead> <tr> <th>Resource</th> <th>Letter of Agreement Criteria*</th> <th>SRP Requirement Criteria</th> </tr> </thead> <tbody> <tr> <td>Soils, vegetation, water</td> <td>The area and associated features demonstrate resilience and resistance to anticipated impacts, and there are no T&E plant species conflicts. The activity is at a developed or public use site, on designated routes, or in a designated dispersed camping area; and existing infrastructure and management for the activity is adequate for the protection of resources. No additional agency management is required.</td> <td>Resource conflicts exist at the area and specific mitigation and/or additional agency management is required for the activity, including but not limited to monitoring and specific mitigation or avoidance stipulations for the protection of resources.</td> </tr> <tr> <td>Cultural resources, paleontological resources, wildlife</td> <td>Resource conflicts are not present; and/or the activity is at a developed or public use site, on designated routes, or in a designated dispersed camping</td> <td>The activity is not at a developed or public use site or on a designated route; and/or resource conflicts exist at the area and specific</td> </tr> </tbody> </table>	Resource	Letter of Agreement Criteria*	SRP Requirement Criteria	Soils, vegetation, water	The area and associated features demonstrate resilience and resistance to anticipated impacts, and there are no T&E plant species conflicts. The activity is at a developed or public use site, on designated routes, or in a designated dispersed camping area; and existing infrastructure and management for the activity is adequate for the protection of resources. No additional agency management is required.	Resource conflicts exist at the area and specific mitigation and/or additional agency management is required for the activity, including but not limited to monitoring and specific mitigation or avoidance stipulations for the protection of resources.	Cultural resources, paleontological resources, wildlife	Resource conflicts are not present; and/or the activity is at a developed or public use site, on designated routes, or in a designated dispersed camping	The activity is not at a developed or public use site or on a designated route; and/or resource conflicts exist at the area and specific	SRP evaluation matrix not carried forward; see Table 5 (6) in Alternative A (No Action) column.	SRP evaluation matrix not carried forward; see Table 5 (6) in Alternative A (No Action) column.	SRP evaluation matrix not carried forward; see Table 5 (6) in Alternative A (No Action) column.	SRP evaluation matrix not carried forward; see Table 5 (6) in Alternative A (No Action) column.
Resource	Letter of Agreement Criteria*	SRP Requirement Criteria											
Soils, vegetation, water	The area and associated features demonstrate resilience and resistance to anticipated impacts, and there are no T&E plant species conflicts. The activity is at a developed or public use site, on designated routes, or in a designated dispersed camping area; and existing infrastructure and management for the activity is adequate for the protection of resources. No additional agency management is required.	Resource conflicts exist at the area and specific mitigation and/or additional agency management is required for the activity, including but not limited to monitoring and specific mitigation or avoidance stipulations for the protection of resources.											
Cultural resources, paleontological resources, wildlife	Resource conflicts are not present; and/or the activity is at a developed or public use site, on designated routes, or in a designated dispersed camping	The activity is not at a developed or public use site or on a designated route; and/or resource conflicts exist at the area and specific											

Alternative A (No Action)			Alternative B	Alternative C	Alternative D	Alternative E
	area; and existing infrastructure and management for the activity is adequate for protection of resources. No additional agency management is required.	mitigation; and/or additional agency management is required for the activity, including but not limited to monitoring and specific mitigation or avoidance stipulations for protection of resources.				
Recreation	The activity is consistent with area recreation goals and objectives and does not present additional conflict with other recreation uses. No additional agency management is required.	The activity is not consistent with area recreation goals and objectives, and/or additional agency management is required for the activity, including but not limited to monitoring and specific mitigation or avoidance stipulations to reduce recreation conflicts.				
<p>* A letter of agreement is not an authorization to use public lands, but it is documentation of the BLM's determination that a permit is not required and that there is an opportunity for the organized group to plan its activity in a manner that does not require permit issuance and oversight; documentation that the organized group contacted and worked with the BLM in planning its activity; and an opportunity to obtain information about the activity and attribute use in the BLM's Recreation Management Information System.</p>						
<p>Per 2008 Monticello RMP</p> <p>REC-16 There would be no competitive mechanized or motorized events in WSAs in accordance with interim management policy (IMP).</p> <p>REC-23 Commercial motorized/mechanized events/tours are allowed on designated routes, except in WSAs.</p> <p>REC-24 Commercial use permits are authorized in conjunction with organized events or when the use supports resource protection and management.</p> <p>REC-26 Commercial motorized or mechanized events or tours in crucial bighorn sheep lambing and rutting areas may be limited in number of participants and duration (depending on the event) from April 1 to June 15 (lambing) and from October 15 to December 15 (rutting), unless it can be shown that the animals are not present in a specific project location or the activity can be conducted so the animals are not adversely impacted.</p> <p>REC-28 Commercial motorized or mechanized events or tours in crucial deer and elk winter range may be limited in the</p>			<p>REC-16 See Management Below (REC-38)</p> <p>REC-23 Allow SRPs/SUPs for non-competitive commercial motorized/mechanized activities on designated routes only. Prohibit commercial motorized/mechanized activities on the Peavine corridor.</p> <p>REC-24 Not carried forward.</p> <p>REC-26 Limit the number of participants and vehicles and duration (depending on the event) for competitive and non-competitive motorized or mechanized activities in crucial bighorn sheep lambing and rutting areas from April 1 to June 15 (lambing) and from October 15 to December 15 (rutting), as needed, unless it can be shown that the animals are not present in a specific location or the activity can be conducted so the animals are not adversely impacted. The type and duration of limitations would be determined at the implementation-level and analyzed with site-specific NEPA as appropriate.</p> <p>REC-28 Limit the number of participants and duration (depending on the event) for competitive and non-competitive motorized or mechanized activities in crucial deer and elk winter range</p>	<p>REC-16 See Management Below (REC-38)</p> <p>REC-23 Same as Alternative B.</p> <p>REC-24 Not carried forward.</p> <p>REC-26 Same as Alternative B.</p> <p>REC-28 Same as Alternative B.</p> <p>REC-29 Group sizes for competitive and non-competitive motorized activities are limited to two groups of 12 vehicles per route per day.</p> <p>REC-30 Not carried forward.</p> <p>REC-32 Not carried forward.</p> <p>REC-33 Same as Alternative A.</p> <p>REC-34</p>	<p>REC-16 See Management Below (REC-38)</p> <p>REC-23 Allow SRPs/SUPs for non-competitive commercial motorized/mechanized activities only on designated routes. Prohibit non-competitive commercial motorized/mechanized activities on the Peavine corridor and LWC managed to conserve those characteristics.</p> <p>REC-24 Not carried forward.</p> <p>REC-26 Prohibit non-competitive motorized or mechanized activities in crucial bighorn sheep lambing and rutting areas from April 1 to June 15 (lambing) and from October 15 to December 15 (rutting).</p> <p>REC-28 Prohibit non-competitive motorized or mechanized activities in crucial deer and elk winter range from November 15 to April 15.</p> <p>REC-29 Group sizes for non-competitive motorized activities would follow the limitations under Alternative A until implementation-level plans are completed.</p> <p>REC-30</p>	<p>REC-23: Same as Alternative D</p> <p>REC-24: Not carried forward</p> <p>REC-26: Same as Alternative D</p> <p>REC-28: Same as Alternative D</p> <p>REC-29: Same as Alternative D</p> <p>REC-33: Same as Alternative B</p> <p>REC-34: Same as Alternative A</p> <p>REC-35: Same as Alternative B</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>number of participants and duration (depending on the event) from November 15 to April 15.</p> <p>REC-29 Group sizes for commercial motorized events/tours are limited to two groups of 12 vehicles per route per day.</p> <p>REC-30 Balloon festivals are limited to 35 balloons with their associated support vehicles.</p> <p>REC-32 Commercial camping is limited to designated areas.</p> <p>REC-33 Commercial hiking to cultural sites is limited to existing and designated trails and human waste must be packed out.</p> <p>REC-34 Ropes and other climbing aids are not allowed to access cultural sites.</p> <p>REC-35 Commercial guides using dogs to hunt/pursue mountain lion and black bear would not operate in areas where dogs are prohibited.</p> <p>REC-36 Commercial motorized or mechanized cross-country use is not allowed in the Cedar Mesa SRMA.</p>	<p>from November 15 to April 15. The type and duration of limitations would be determined at the implementation-level and analyzed with site-specific NEPA as appropriate.</p> <p>REC-34 Same as Alternative A.</p> <p>REC-29 Group sizes for competitive and non-competitive motorized activities are limited to two groups of 12 vehicles per route per day.</p> <p>REC-30 Not carried forward.</p> <p>REC-32 Not carried forward.</p> <p>REC-33 Commercial SRP and SUP visitation to archaeological resources are limited to Public Use (Developed and Undeveloped) areas and existing and designated trails. Solid human waste must be packed out and disposed of at appropriate disposal facilities</p> <p>REC-35 Hunting dogs would not be allowed in areas where dogs are prohibited.</p> <p>REC-36 Not carried forward – Addressed in Section 2.4.21, Travel and Transportation Management.</p>	<p>Same as Alternative A.</p> <p>REC-35 Same as Alternative B.</p> <p>REC-36 Not carried forward – Addressed in Section 2.4.21, Travel and Transportation Management.</p>	<p>Not carried forward.</p> <p>REC-32 Not carried forward.</p> <p>REC-33 Same as Alternative A.</p> <p>REC-34 Same as Alternative A.</p> <p>REC-35 Same as Alternative B.</p> <p>REC-36 Not carried forward – Addressed in Section 2.4.21, Travel and Transportation Management.</p>	
<p>Per 2008 Monticello RMP Competitive Events</p> <p>REC-37 Motorized/mechanized competitive events would be authorized consistent with OHV designations.</p> <p>REC-38 Motorized and mechanized competitive events are not permitted in WSAs.</p>	<p>REC-37 Same as Alternative A.</p> <p>REC-38 Competitive mechanized or motorized events are not permitted within designated wilderness, WSAs, USDA Forest Service recommended wilderness, Primitive ROS class, Semi-Primitive non-motorized ROS class, or lands managed to protect wilderness characteristics (700,936 acres) (Appendix A, Figure 2-25, Recreation setting characteristics for operational components; Figure 2-26, Recreation setting characteristics for physical components; Figure 2-27, Recreation setting characteristics for social components, and Figure 2-28, Recreation Opportunity Spectrum).</p>	<p>REC-37 Same as Alternative A.</p> <p>REC-38 Same as Alternative B. (Appendix A, Figure 2-25, Recreation setting characteristics for operational components; Figure 2-26, Recreation setting characteristics for physical components; Figure 2-27, Recreation setting characteristics for social components, and Figure 2-28, Recreation Opportunity Spectrum).</p>	<p>REC-37 Same as Alternative A.</p> <p>REC-38 Prohibit competitive mechanized or motorized activities within BENM. (Appendix A, Figure 2-25, Recreation setting characteristics for operational components; Figure 2-26, Recreation setting characteristics for physical components; Figure 2-27, Recreation setting characteristics for social components, and Figure 2-28, Recreation Opportunity Spectrum).</p>	No similar management direction.
<p>Per 2020 ROD/MMPs SRMA outside of RMZs SRPs:</p> <ul style="list-style-type: none"> Competitive OHV events and vending use would not be allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities, an SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals; however, if monitoring indicates significant impacts to BENM objects, the BLM would consider adjusting group size thresholds during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment. <p>Camping: Until analyzed in an implementation-level plan or until dispersed camping sites are designated, camping would be encouraged in previously disturbed sites.</p>	Not carried forward – these areas would be incorporated into other RMAs.	Not carried forward – these areas would be incorporated into other RMAs.	Not carried forward – these areas would be incorporated into other MAs.	Not carried forward – these areas would be incorporated into other RMAs.
Per 2008 Monticello RMP	BLM Non-RMA lands	BLM Non-RMA lands	BLM Non-RMA lands	No similar management.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>ERMA</p> <p>REC-141 ERMA lands are managed to provide an undeveloped setting where visitors can disperse and recreate in a generally unregulated manner, as long as the use is consistent with other resource values.</p> <p>REC-142 Manage all lands within the PA, not within a SRMA (either initially or through subsequent action as described above) as the Monticello ERMA.</p> <p>REC-143 Any portions of an ERMA subject to other management prescriptions (i.e., ACEC, WSA, etc.) would be managed according to those prescriptions.</p> <p>REC-144 Monitor the ERMA to determine if more intensive recreational management is required to protect resource values and preserve the recreational experience.</p> <p>REC-145 Encourage Leave No Trace and Tread Lightly principles throughout the ERMA.</p> <p>REC-146 ERMA lands may be designated as SRMAs in the future based on intensity of use and would be analyzed through the plan amendment process.</p> <p>REC-147 Minimal facilities may be constructed in the ERMA as needed to ensure visitor health and safety, reduce user conflict, and protect resources.</p> <p>REC-148 Mesa Top Camping (other than Cedar Mesa): Limit Bears Ears Road to designated camping only from the intersection of SR-275 to the USDA Forest Service boundary. Limit the Deer Flat Road to designated camping only for the first 4 miles from SR-275. Coordinate with Glen Canyon NRA on building a campground at Muley Point or pursue a land exchange for Muley Point in order to develop a campground.</p> <p>REC-149 Within the ERMA, dispersed vehicle camping is allowed only in previously disturbed areas within 150 feet of designated routes (on each side of a centerline). If use is such that undue environmental impacts are taking place, the BLM would close and rehabilitate damaged areas. This use would not include areas within WSAs (379,418 acres) or non-WSA areas with wilderness characteristics (48,803 acres), WSR corridors, ACECs, or T&E/special status species habitats. Where monitoring identifies resource impacts, future implementation-level plans could consider designation of specific camp sites.</p>	<p>REC-141 Non-RMA lands throughout BENM would be managed to provide an undeveloped setting where visitors can disperse and recreate in a generally unregulated manner, as long as the use is consistent with the protection of BENM objects.</p> <p>REC-143 Any portions of non-RMA lands subject to other management prescriptions (i.e., ACEC, WSA, etc.) would be managed according to those prescriptions.</p> <p>REC-144 Not carried forward.</p> <p>REC-146 Non-RMA lands may be designated as RMAs in the future based on intensity of use and the need to protect BENM objects and would be analyzed through the plan amendment process.</p> <p>REC-149 Non-RMA lands would be open to dispersed camping, unless otherwise closed by the agencies. If monitoring indicates adverse impacts to Monument objects, the agencies would close areas to dispersed camping and would restore the impacted areas. In OHV closed areas, only non-motorized modes of travel would be allowed to access the dispersed camping opportunities.</p> <p>REC-147 Recreation facilities may be constructed in the non-RMA lands as needed to ensure visitor health and safety, reduce user conflict, and protect resources.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	
<p>No similar management.</p>	<p>Recreational shooting would generally be allowed but would be prohibited at campgrounds/developed recreation facilities, climbing areas, existing and designated trails, parking areas, trailheads, rock writing sites, and structural cultural sites, and across roadways. Where problem areas occur regarding recreational shooting, the BLM would post signs notifying visitors of restrictions and would consider additional recreational shooting closures. Additional restrictions may apply where covered elsewhere in management actions.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B with the addition of recreational shooting being prohibited in WSAs, recommended wilderness, and protected LWC.</p>	<p>Recreational shooting would be prohibited in BENM. This prohibition does not apply to the use of firearms in the lawful pursuit of game.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
	This prohibition does not apply to the use of firearms in the lawful pursuit of game.			
No similar management.	No similar management.	No similar management.	No similar management.	<p>Activities inconsistent with the protection of Monument objects and the Bears Ears cultural landscape, as determined in collaboration with the BEC and in accordance with Tribal expertise and Traditional Indigenous Knowledge are prohibited in BENM. Prohibited activities include, but are not limited to, paragliding, hang gliding, base jumping, wing-suit flying, geocaching, and rock stacking. These are inappropriate activities in the Bears Ears cultural landscape according to Tribal expertise and Traditional Indigenous Knowledge.</p> <p>Climbing activity specific management (Monument-wide) (includes sport climbing, traditional climbing, canyoneering)</p> <ul style="list-style-type: none"> • Use physical infrastructure to educate climbers at climbing access points on potential climbing impacts and how to recreate responsibly and/or self-regulate to avoid impacting these resources. • Agencies, in collaboration with the BEC, would work with climbing organizations, Tribes, and SRP holders to increase volunteer monitoring and to educate climbers about the cultural landscape of BENM and identified cultural resources within the Indian Creek area. If site-specific impacts exist, climbing routes can be closed and access trails and staging areas may be rerouted. Any closures would be identified in collaboration with the BEC and Tribal Nations. Climbing closures would be identified via physical infrastructure and/or kiosks/signs. • Replacement of existing bolts, anchors, and fixed gear would be allowed on existing climbing and canyoneering routes as needed for safety reasons without prior authorization. • Any new climbing routes that require the placement of bolts, anchors or fixed gear requires approval from the agencies, who would work collaboratively with the BEC to determine whether the route is appropriate to protect Monument objects, including cultural resources and wildlife, as informed by Traditional Indigenous Knowledge. <p>Hiking management (Monument-wide)</p> <ul style="list-style-type: none"> • Pets must be leashed at all times. • Pets are prohibited from swimming in springs, potholes, or other natural water sources. • Pet waste disposal requirements are identical to human waste disposal requirements. • Pets are prohibited from entering or touching Monument objects, such as but not limited to dwelling or storage structures, relict plant communities, and habitat for culturally important species. • Pets would not be allowed in Grand Gulch and tributary canyons, Fish and Owl Canyons above the confluence of these canyons, Moon House, Doll House, and additional sites designated by the agencies, in collaboration with the BEC <p>RAMPs or other specific management plans or directives, would be developed for areas of BENM that experience year-round or seasonal use that requires greater management prohibitions to protect Monument objects. Examples included areas of special designations, such as TCPs, ACECs, or other cultural and/or resource-specific requirements guided by Monument proclamations or other federal laws.</p>

2.4.21. Travel and Transportation Management

2.4.21.1. GOALS AND OBJECTIVES

- Manage the transportation system so it provides safe and reasonable access while protecting BENM objects.
- Support a culture of stewardship and conservation of the landscape during travel in BENM.
- Ensure that travel and transportation management facilitate appropriate use and interaction with the cultural landscape of BENM. Ensure the travel network supports education and protection of BENM objects by siting roads and trails in locations that allow the public to better understand the cultural landscape in a manner that is consistent with the protection of BENM objects.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.21.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would develop a travel and transportation implementation-level plan. Agencies would coordinate with local government and the BEC and other Tribal Nations on implementation-level travel planning.
- Identify the entire BENM as a travel management area for the purposes of current and future travel management.
- Prohibit cross-country OHV travel in BENM.
- Except for emergency or authorized purposes, motorized and non-motorized mechanized vehicle use would be allowed only on roads and trails designated for such use, consistent with the protection of BENM objects.
- Designation of new roads or trails for public motorized vehicle use must be limited to routes necessary for public safety or protection of BENM objects. Agencies would collaborate with the BEC on designation of new routes in an implementation-level travel plan and would incorporate Traditional Indigenous Knowledge, as applicable.
- The system of roads and trails would be well marked to protect BENM objects, promote safety, and minimize conflict among various user groups while accommodating appropriate access.
- During implementation-level travel management, ensure that designated roads and trails would be designed and/or modified to ensure the protection of BENM objects, including aquatic, riparian, and upland resources. See Appendix H: Travel Management Plan Criteria.
- Easements necessary to provide for public and official use would be acquired and maintained, consistent with protecting BENM objects.
- Plan and coordinate the maintenance, improvement, and monitoring of roads and trails with local governments, partners, and volunteers. See Management Actions by Alternative for definitions of *maintenance* and *improvements*.
- For NFS lands, administrative level 1 roads would not be used by the public, except where they are dually designated as motorized trails. Gates or other barriers would be installed to manage use of these administrative level 1 roads.
- For lands managed by the BLM, motorized aircraft (including but not limited to fixed-wing aircraft, helicopters, powered paragliders, electric aircraft, and unmanned aircraft systems [often referred to as UASs or drones]) are managed as OHVs (43 CFR 8340) when on or immediately over agency managed lands and waters.
- Agencies would collaborate with the BEC to identify seasonal motorized use area closures as needed to provide for resource rest.

2.4.21.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-20. Alternatives for Travel Management

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 2020 ROD/MMPs</p> <p>BLM-administered lands within BENM would be OHV limited with the following exceptions, which would be OHV closed (Appendix A, Figure 2-33, Alternative A, off-highway vehicle area designation):</p> <ul style="list-style-type: none"> • Designated wilderness • WSAs/ISA complexes • San Juan Hill Recreation Management Zone (RMZ) • McLoyd Canyon-Moon House RMZ (within Fish Creek Canyon WSA) • Arch Canyon Backcountry RMZ • Lavender Mesa ACEC • Bridger Jack Mesa WSA 	<p>Open to OHV use: 0 acre</p> <p>OHV limited: 797,525 acres</p> <p>Closed to OHV use: 566,627 acres (Appendix A, Figure 2-34, Alternative B, off-highway vehicle area designation)</p> <p>BENM would be OHV limited with the following exceptions, which would be OHV closed (Appendix A, Figure 2-34, Alternative B, off-highway vehicle area designation):</p> <ul style="list-style-type: none"> • Designated wilderness • USDA Forest Service recommended wilderness • WSAs (381,920 acres) • Lavender Mesa ACEC (649 acres) • Indian Creek ACEC (3,936 acres) 	<p>Open to OHV use: 0 acre</p> <p>OHV limited: 700,122 acres</p> <p>Closed to OHV use: 644,030 acres</p> <p>Same as Alternative B, with the additional following exceptions that would be OHV closed (Appendix A, Figure 2-35, Alternative C, off-highway vehicle area designation):</p> <ul style="list-style-type: none"> • BLM-administered lands managed for wilderness characteristics (97,403 acres) 	<p>Open to OHV use: 0 acre</p> <p>OHV limited: 381,239 acres</p> <p>Closed to OHV use: 982,914 (Appendix A, Figure 2-36, Alternative D, off-highway vehicle area designation)</p> <p>Same as Alternative B, with the additional following exceptions that would be OHV closed (Appendix A, Figure 2-36, Alternative D, off-highway vehicle area designation)</p> <ul style="list-style-type: none"> • BLM-administered lands managed for wilderness characteristics (419,128 acres) • Arch Canyon (same area as Arch Canyon RMZ) (3,344 acres) 	<p>Open to OHV use: 0 acre</p> <p>OHV limited: 794,181 acres</p> <p>Closed to OHV use: 569,971 acres (Appendix A, Figure 2-37, Alternative E, off-highway vehicle area designation)</p> <p>Same as Alternative B, with the additional following exceptions that would be OHV closed (Appendix A, Figure 2-37, Alternative E, off-highway vehicle area designation)</p> <ul style="list-style-type: none"> • Arch Canyon (same area as Arch Canyon RMZ) (3,344 acres)

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> • Indian Creek ACEC • A portion of the San Juan River Special Recreation Management Area (SRMA) • Tank Bench SRMA, Outlaw Canyon • Tank Bench SRMA, South Cottonwood Wash <p>Per 2008 Monticello RMP Open to OHV use: 0 acre Limited to designated routes: 928,080 acres Mountain bike use is limited to the same designated routes as OHV travel. Closed to OHV use: 436,075 acres: To protect the following scenic values:</p> <ul style="list-style-type: none"> • Indian Creek ACEC <p>To protect the following cultural, scenic, and recreational values:</p> <ul style="list-style-type: none"> • A portion of the San Juan River SRMA <p>To protect the following cultural values:</p> <ul style="list-style-type: none"> • Tank Bench SRMA, Outlaw Canyon • Tank Bench SRMA, South Cottonwood Wash <p>To protect the wilderness character of the following:</p> <ul style="list-style-type: none"> • Fish Creek Canyon WSA • Grand Gulch ISA Complex • Road Canyon WSA • Dark Canyon ISA Complex • Indian Creek WSA • Butler Wash WSA • Mancos Mesa WSA • Cheese Box Canyon WSA • South Needles WSA and the Administratively Endorsed Area, which are contiguous to the Butler Wash WSA. 	<ul style="list-style-type: none"> • ROS classes of Primitive and Semi-Primitive Non-Motorized • A portion of the San Juan River SRMA (a portion of the San Juan Hill RMZ) (673 acres) • A portion of Outlaw Canyon (1,877 acres) • A portion of South Cottonwood Wash near Bluff (844 acres) • Two WSR segments totaling (2,315) 			
<p>On NFS lands within BENM, the following would be implemented: Per 1986 Manti-La Sal LRMP Transportation System Management Close newly constructed intermittent local roads to the public after initial intended use is completed when:</p> <ul style="list-style-type: none"> • The establishment of public use is undesirable. • The road is unsafe for public travel. • Management direction has previously been established to close the road. <p>Allow commercial or permitted use on Forest Development Roads under the following conditions:</p> <ul style="list-style-type: none"> • Use is compatible with existing road standards, designs, and public safety and users provide commensurate share of road maintenance. • The user reconstructs the road to incorporate both existing and proposed traffic and provides commensurate share of road maintenance. • If the road meets design standards but the combined use does not fulfill public safety requirements due to volume of traffic, the road may be administratively managed to control conflicting traffic, unsafe conditions, or traffic flows. 	<p>Management areas from the 1986 Manti-La Sal LRMP are not carried forward. Travel management decisions are described above.</p>	<p>Management areas from the 1986 Manti-La Sal LRMP are not carried forward. Travel management decisions are described above.</p>	<p>Management areas from the 1986 Manti-La Sal LRMP are not carried forward. Travel management decisions are described above.</p>	<p>Management areas from the 1986 Manti-La Sal LRMP are not carried forward. Travel management decisions are described above.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> • Encourage the development of Forest Development Roads, when constructed or reconstructed for special purposes to meet existing and potential all-purpose needs. • Put roads under SUP or easement that are needed for the benefit of private uses and are not needed for public travel or the administration of USDA Forest Service resources. <p>Consider turning existing Forest Development Roads over to county or state jurisdiction when:</p> <ul style="list-style-type: none"> • the use is predominately to serve non-USDA Forest Service resources, or • the road better complements county or state jurisdiction than USDA Forest Service administration, or • little or no future forest need for the management of USDA Forest Service resources is perceived, or • the road is of such high standards that established USDA Forest Service maintenance is difficult or impossible. <p>Close Forest Development Roads when unacceptable environmental or road damage is occurring for other road use.</p> <p>Where possible, establish cost and commensurate share agreements for access roads constructed for other resource uses.</p> <p>Coordinate transportation planning for Forest Development Roads with forest trails to provide continuity and fulfill USDA Forest Service transportation needs.</p> <p>Design, construct, and maintain roads to assure they are compatible insofar as possible with developed recreation sites use unit objectives.</p> <p>Undeveloped Motorized Recreational Use (UDM)</p> <p>Design, construct, and maintain roads to assure they are compatible insofar as possible with Undeveloped Motorized recreation management unit objectives.</p> <p>Key Big-Game Winter Range (KWR)</p> <p>Use road or area closures to maintain habitat effectiveness. Prohibit activities during critical periods of big game use. Approved activities must be short term and prompt reclamation must be assured.</p> <p>Key Big-game Winter Range (KWR)</p> <p>Prohibit new permanent roads in the unit. Allow short-term (temporary) roads where the use would not conflict with wintering big game.</p> <p>General Big-Game Winter Range (GWR)</p> <p>Allow new roads to meet management needs. Obliterate and rehabilitate temporary roads within one season after planned use ends.</p> <p>New roads may be constructed when:</p> <ul style="list-style-type: none"> • There is no acceptable alternative to build the road outside the unit, and the road is essential to achieve priority goals and objectives of contiguous management units, or to provide access to land administered by other government agencies or to contiguous private land. • Winter road use would not significantly disturb wintering big-game animals. • Roads cross the winter range in the minimum distance feasible to facilitate the needed use. <p>General Big-game Winter Range (GWR)</p> <p>Close and/or restrict road use as appropriate to reduce stress on big-game animals.</p> <p>Wood-Fiber Production and Harvest (TBR)</p>				

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Locate, design, and construct the minimum Forest Development Road necessary to provide a stable road base to serve short- and long- term timber needs, under the timber sale program.</p> <p>To the extent possible, give emphasis to and coordinate road locations for timber sales that would benefit future fuelwood sales and other timber activities.</p> <p>Riparian Area Management (RPN)</p> <p>Locate new roads and trails outside riparian areas unless alternative routes have been reviewed and rejected.</p> <p>Do not parallel streams when road location must occur in riparian areas except where absolutely necessary. Cross streams at points that best complement riparian and aquatic ecosystems as well as road and stream geometry. Locate crossings (fords) at points of low bank slope and firm surfaces.</p> <p>Minimize detrimental disturbance to the riparian unit by construction and maintenance activities. Initiate timely and effective rehabilitation of disturbed sites and restore riparian areas so that a vegetation ground cover or suitable substitute protects the soil from erosion and prevents increased sediment yield.</p> <p>Municipal Water Supply (MWS)</p> <p>Allow new roads only if needed to meet municipal water supply management emphasis or temporary roads to meet limited resource needs. Provide erosion protection on temporary roads before each winter season.</p> <p>Research, Protection, and Interpretation of Lands and Resources (RPI)</p> <p>Generally, transportation system facilities are permitted where the facility is compatible with the purpose for which the unit is established.</p> <p>Where appropriate, develop trails for interpretation and/or self-study.</p> <p>Limit trails in RNAs to those needed for access to conduct research and for educational purposes.</p> <p>Convert roads not needed for authorized activities to trails or restore the road area to the pre-disturbed conditions.</p> <p>Dark Canyon Wilderness Management (DCW)</p> <p>Construct or reconstruct and maintain trails only when needed to meet wilderness objectives.</p> <p>Provide low visual impact signs at trail terminals and trail junctions only. Include only mileage, trail identification, and identification of terminal points.</p> <p>Use untreated routed wood signs on butt-treated posts.</p> <p>Avoid the establishment of service roads for maintenance.</p>				
<p>Per 2020 ROD/MMPs</p> <p>Mechanized travel (e.g., bicycles) is limited to routes where OHV use is allowed and to trails specifically designated for mechanized use.</p>	<p>Mechanized travel (e.g., bicycles) would be limited to routes where OHV use is allowed and to trails specifically designated for mechanized use.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative E.</p>	<p>With the exception of existing non-motorized trails that allow mechanized travel, future mechanized travel would be limited to routes where OHV use is allowed. See Appendix H: Travel Management Plan Criteria.</p>
<p>Per 2020 ROD/MMPs</p> <p>Until implementation-level travel planning, non-motorized and non-mechanized use would be allowed on existing and designated trails including but not limited to the following:</p> <p>Blue Gramma, 4x4 Wall, Donnelly, Supercrack Buttress, Battle of the Bulge, Bridger Jack Mesa, Broken Tooth Wall, Scarface, Pistol Whipped, McLoyd Canyon, North Mule Canyon, South Mule Canyon, Lower Mule Canyon from Comb Wash, Mule Canyon or Cave Canyon Towers, Butler Interpretive Trail, Monarch Cave Trail, Fish Mouth Trail, Cold</p>	<p>Visitors would be encouraged to stay on existing and designated trails. The following trails would be maintained, as identified in the 2008 Monticello TMP (for BLM-administered lands), as amended, and USDA Forest Service system trails, as amended.</p> <p>Open to Foot Travel: Kane Gulch, Todie Canyon, Bullet Canyon, Sheiks Canyon, Government Trail, Collins Canyon, Slickhorn Canyon, Point Lookout Canyon, Grand Gulch (from the junction to the San Juan River), Fish Canyon, Owl Canyon, Road Canyon, McLoyd Canyon, Lime Creek Canyon, North Mule Canyon, South Mule Canyon, Lower Mule Canyon from</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Until the implementation-level travel plan, allow for only non-motorized and non-mechanized use on the following trails, as identified in the 2008 Monticello TMP (for BLM-administered lands), as amended, and USDA Forest Service system trails, as amended.</p> <p>Open to Foot Travel: Kane Gulch, Todie Canyon, Bullet Canyon, Sheiks Canyon, Government Trail, Collins Canyon, Slickhorn Canyon, Point Lookout Canyon, Grand Gulch (from the junction to the San Juan River), Fish Canyon, Owl Canyon, Road Canyon, McLoyd Canyon, Lime Creek Canyon, North Mule Canyon, South Mule Canyon, Lower Mule Canyon from</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Springs Trail, Procession Panel Trail, Wolf Man Panel Trail, Moon House Trail, Ball Room Cave Trail, and Lower Mule Canyon from Comb Wash.</p> <p>On NFS lands: Butts Canyon, Texas Canyon, Arch Canyon, West Rim Texas Canyon, East Rim Texas Canyon, and South Long Point.</p> <p>Per 2008 Monticello RMP</p> <p>Manage the following trails for non-mechanized use:</p> <p>Open to Foot Travel: Kane Gulch, Todie Canyon, Bullet Canyon, Sheiks Canyon, Government Trail, Collins Canyon, Slickhorn Canyon, Point Lookout Canyon, Grand Gulch (from the junction to San Juan River), Fish Canyon, Owl Canyon, Road Canyon, McLoyd Canyon, Lime Creek Canyon, North Mule Canyon, South Mule Canyon, Lower Mule Canyon from Comb Wash, Mule Canyon or Cave Canyon Towers, Arch Canyon, John's Canyon, Honaker Trail, Keeley Trail, Dark Canyon (Sundance Trail), Fable Valley Trail, Salt Creek Mesa Trail, Butler Ruin Interpretative Trail, Sand Island Petroglyph Trail, Shay Canyon Petroglyph Trail, Newspaper Rock Trail, Salvation Knoll Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, Procession Panel Trail, Wolf Man Panel Trail, Moon House Trail, Ball Room Cave Trail. Bridger Jack Mesa, Super Crack Buttress, Cat Wall, Broken Tooth Wall, Scarface, Battle of the Bulge, Blue Gramma, 4x4 Wall, Donnelly, Pistol Whipped, Fin Wall, Second Meat Wall, Original Meat Wall, Tenderloins Wall, Optimator Wall, Sparks Wall, and Way Rambo.</p> <p>Open for Stock Overnight Use: Kane Gulch, Government Trail, Collins Canyon, Grand Gulch (from Kane Gulch to the junction of Collins Canyon; no stock below Collins Canyon), Fish Canyon (from Comb Wash to the confluence with Owl Canyon), Road Canyon, Lime Creek Canyon, Lower Mule Canyon from Comb Wash, Arch Canyon, John's Canyon, and Salt Creek Mesa Trail.</p> <p>Open for Stock Day Use: Bullet Canyon (from Grand Gulch to Jailhouse Ruin), Fish Canyon (2 miles above the confluence with Owl Canyon), Owl Canyon (to Neville's Arch), Road Canyon, McLoyd Canyon (to the impassible pour-off), Lime Creek Canyon, Salt Creek Mesa Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, and Procession Panel Trail.</p> <p>Per 2008 Monticello RMP</p> <p>Non-mechanized routes may be added through subsequent planning at the activity plan level on a case-by-case basis.</p> <p>Indian Creek Climbing Trails include the following: Bridger Jack Mesa, Super Crack Buttress, Cat Wall, Broken Tooth Wall, Scarface, and Battle of the Bulge.</p>	<p>Comb Wash, Mule Canyon or Cave Canyon Towers, Arch Canyon, John's Canyon, Honaker Trail, Dark Canyon (Sundance Trail), Fable Valley Trail, Salt Creek Mesa Trail, Butler Wash Interpretative Trail, Sand Island Petroglyph Trail, Shay Canyon Petroglyph Trail, Newspaper Rock Trail, Salvation Knoll Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, Procession Panel Trail, Wolf Man Panel Trail, Moon House Trail, Ball Room Cave Trail. Bridger Jack Mesa, Super Crack Buttress, Cat Wall, Broken Tooth Wall, Scarface, Battle of the Bulge, Blue Gramma, 4x4 Wall, Donnelly, Pistol Whipped, Fin Wall, Second Meat Wall, Original Meat Wall, Tenderloins Wall, Optimator Wall, Sparks Wall, and Way Rambo.</p> <p>Open for Stock Overnight Use: Kane Gulch, Government Trail, Collins Canyon, Grand Gulch (from Kane Gulch to the junction of Collins Canyon; no stock below Collins Canyon), Fish Canyon (from Comb Wash to the confluence with Owl Canyon), Road Canyon, Lime Creek Canyon, Lower Mule Canyon from Comb Wash, Arch Canyon, John's Canyon, and Salt Creek Mesa Trail.</p> <p>Open for Stock Day Use: Bullet Canyon (from Grand Gulch to Jailhouse Ruin), Fish Canyon (2 miles above the confluence with Owl Canyon), Owl Canyon (to Neville's Arch), Road Canyon, McLoyd Canyon (to the impassible pour-off), Lime Creek Canyon, Salt Creek Mesa Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, and Procession Panel Trail.</p> <p>Non-motorized trails on NFS lands: Allen Canyon, Arch Canyon, Blue Creek, Blue Creek-Tuerto Canyon, Blue Creek-Allen Canyon, Lower Bob Parker Peak, Brushy Knoll Trail, Butts Canyon, Chippean Canyon, Cream Pots Trail, Dark Canyon Trail, Doll House Trail, Dry Wash Trail, East Rim Texas, Hammond Canyon, Hop Creek, Horse Pasture, Lyman Canyon, Maverick Point/Mormon Pasture, Mule Canyon, Kigalia Canyon, Lewis Lodge Trail, Peavine Canyon, Posey Canyon, Posey Trail (Elk Ridge to Hammond Canyon), Redd Pasture, Rig Canyon, Ruin Park, Salvation Knoll, Shay to Skyline, Short Point Trail, Skyline, South Elk Ridge, Texas Canyon, Trough Canyon, Trail Canyon, Twin Springs, Tuerto Canyon, West Rim Texas Canyon, and Woodenshoe Canyon.</p> <p>Maintain existing and designated trails for non-motorized and non-mechanized use, including brushing, tread stabilization, installation of routine signs, markers, culverts, ditches, water bars, gates; placement of recreational, special designation, or information signs; and visitor registers, kiosks, and portable sanitation devices as needed to protect BENM objects.</p> <p>In collaboration with the BEC, non-mechanized and non-motorized routes may be added through subsequent planning at the activity plan level on a case-by-case basis, consistent with the protection of BENM objects.</p> <p>Non-mechanized and non-motorized travel is not restricted on public lands except where limited or prohibited to protect specific resource values, to provide for public safety, or to maintain an identified opportunity.</p>	<p>See Management Actions Common to All Alternative (Section 2.4.21.2).</p>	<p>See Management Actions Common to All Alternative (Section 2.4.21.2).</p>	<p>Comb Wash, Mule Canyon or Cave Canyon Towers, Arch Canyon, John's Canyon, Honaker Trail, Dark Canyon (Sundance Trail), Fable Valley Trail, Salt Creek Mesa Trail, Butler Wash Interpretative Trail, Sand Island Petroglyph Trail, Shay Canyon Petroglyph Trail, Newspaper Rock Trail, Salvation Knoll Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, Procession Panel Trail, Wolf Man Panel Trail, Moon House Trail, Ball Room Cave Trail. Bridger Jack Mesa, Super Crack Buttress, Cat Wall, Broken Tooth Wall, Scarface, Battle of the Bulge, Blue Gramma, 4x4 Wall, Donnelly, Pistol Whipped, Fin Wall, Second Meat Wall, Original Meat Wall, Tenderloins Wall, Optimator Wall, Sparks Wall, and Way Rambo.</p> <p>Open for Stock Day Use: Bullet Canyon from Grand Gulch to Jailhouse Ruin. Two miles upstream Fish Canyon from the confluence with Owl Canyon, McLoyd Canyon to impassable pour-off, and Owl Canyon to Neville's Arch. Kane Gulch, Collins Canyon, Government Trail, Grand Gulch from Kane Gulch to Collins Canyon, Fish Creek Canyon from Comb Wash to the confluence with Owl Canyon, Mule Canyon South of U-95, Road Canyon, Lime Creek Canyon, John's Canyon, and Arch Canyon.</p> <p>Non-motorized trails on NFS lands: Allen Canyon, Arch Canyon, Blue Creek, Blue Creek-Tuerto Canyon, Blue Creek-Allen Canyon, Lower Bob Parker Peak, Brushy Knoll Trail, Butts Canyon, Chippean Canyon, Cream Pots Trail, Dark Canyon Trail, Doll House Trail, Dry Wash Trail, East Rim Texas, Hammond Canyon, Hop Creek, Horse Pasture, Lyman Canyon, Maverick Point/Mormon Pasture, Mule Canyon, Kigalia Canyon, Lewis Lodge Trail, Peavine Canyon, Posey Canyon, Posey Trail (Elk Ridge to Hammond Canyon), Redd Pasture, Rig Canyon, Ruin Park, Salvation Knoll, Shay to Skyline, Short Point Trail, Skyline, South Elk Ridge, Texas Canyon, Trough Canyon, Trail Canyon, Twin Springs, Tuerto Canyon, West Rim Texas Canyon, and Woodenshoe Canyon.</p> <p>Stock use, both day and overnight, is limited to no more than one overnight stock party at a time in any canyon on Cedar Mesa, and to only one stock trip at any time, day or overnight, in Grand Gulch. Stock day use would be limited to one party per day per trailhead in all canyons requiring permits (except Grand Gulch and McLoyd). The BLM and BEC would monitor day use and the agency would implement a day-use allocation and reservation system at a future date, if the impacts of day-use visitation warrant.</p>
<p>Per 2020 ROD/MMPs</p> <p>Until implementation-level travel planning is completed, OHV use within areas designated in the MMP as OHV limited areas would be managed according to the Monticello Field Office TMP and the USDA Forest Service Motorized Vehicle Use Map.</p>	<p>See Management Actions Common to All Alternative (Section 2.4.21.2).</p>	<p>See Management Actions Common to All Alternative (Section 2.4.21.2).</p>	<p>See Management Actions Common to All Alternative (Section 2.4.21.2).</p>	<p>See Management Actions Common to All Alternative (Section 2.4.21.2).</p>
<p>Per 2008 Monticello RMP</p> <p>There are no exceptions that allow for cross-country travel for game retrieval or antler gathering in areas designated as</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
limited or closed. OHV use for game retrieval would adhere to all OHV classifications.				
<p>Per 2008 Monticello RMP</p> <p>Where the Authorized Officer determines that OHVs are causing considerable adverse impacts, the Authorized Officer shall close or restrict such areas. The public would be notified. The BLM could impose limitations on types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, or cultural or vegetative resources, especially by off-road travel in an area that is limited to designated routes.</p>	<p>In addition to 43 CFR 8341.2, in OHV limited areas, where the agencies, in collaboration with the BEC and Tribal Nations, determine that OHVs are causing considerable adverse impacts to BENM objects, including traditional uses and resources and areas important for traditional ceremonies, the agencies would close or otherwise restrict OHV use in such areas.</p> <p>In OHV limited areas, OHV limitations, including seasonal closures, would be identified during travel management planning, in collaboration with the BEC, to allow for resource rest and/or traditional uses or ceremonies and to comply with 43 CFR 8342.1. See Appendix H: Travel Management Plan Criteria.</p>	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
<p>Per 2008 Monticello RMP</p> <p>Where routes remain available for motorized use within WSAs, such use could continue on a conditional basis. Use of the existing routes in the WSAs ("ways" when located within WSAs – see Glossary) could continue as long as the use of these routes does not impair wilderness suitability, as provided by the interim management policy (BLM 1995). If Congress designates the area as wilderness, the routes would be closed. In the interim, if use and/or noncompliance are found through monitoring efforts to impair the area's suitability for wilderness designation, the BLM would take further action to limit use of the routes or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values. This applies to the 0.08 mile open to motorized recreation use to the Moon House site. This can also be applied to administrative access.</p>	No similar action.	No similar action.	No similar action.	No similar action.
<p>Per 2008 Monticello RMP</p> <p>OHV Area Designations (Appendix A, Figure 2-33, Alternative A, off-highway vehicle area designations)</p> <p>One way in Fish Creek WSA totaling 0.08 mile remains conditionally open to motorized recreation use in order to access the Moon House site. In addition, four ways remain available for administrative access only and are not available for motorized recreation use:</p> <ul style="list-style-type: none"> • Two ways in the Grand Gulch ISA-Pine Canyon and Slickhorn units, totaling 3.1 miles and located east of Pine Canyon and Point Lookout areas. • One way in Fish Creek WSA-Lower Baullie Mesa, totaling 4.93 miles. • One way in Road Canyon WSA-Perkins Point, totaling 2.67 miles. <p>Miles of Designated and Non-Designated Routes on Public Lands within the Monticello Planning Area</p> <p>Open 2,820 miles.</p> <p>Closed 316 miles.</p> <p>Special Stipulation Areas within the Limited to Designated Routes Category</p> <p>Arch Canyon (to protect wildlife).</p> <p>OHV use is limited to the designated route up to the NFS lands boundary year-round, a total of 8 miles one way.</p> <p>Organized and commercial groups are required to obtain an SRUP. This permit would allow access on the designated route up to the NFS lands boundary except March 1–August 31. During this period, access would be 7.5 miles of the</p>	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
designated route. Motorized access would not be allowed within 0.5 mile of the NFS lands boundary.				
Landing on and taking off are allowed from the following airstrips: Bluff Airport and Fry Canyon Airstrip. Landing on and taking off from backcountry airstrips could be allowed if the backcountry airstrips are designated through implementation-level planning.	For the purposes of the RMP/EIS, motorized aircraft include, but are not limited to, fixed-wing aircraft, helicopters, powered paragliders, electric aircraft, and UASs. The landings and takeoffs of motorized aircraft in BENM would be managed as follows: Public use of BENM for landings and takeoffs of motorized aircraft would only be allowed on routes designated in a manner that allows such use in a TMP, in addition to allowing landings and takeoffs of motorized aircrafts at the following existing airstrips: Bluff Airport and Fry Canyon Airstrip. Subject to the following bullet, landings and takeoffs of motorized aircraft would be prohibited elsewhere within BENM, including within 300 feet of developed recreation sites and areas. The agency may authorize case-by-case landings/takeoffs of motorized aircraft through formal permitting processes, where the use is beneficial to protecting BENM objects.	The landings and takeoffs of motorized aircraft in BENM would be managed as follows: <ul style="list-style-type: none">Public use of BENM for landings and takeoffs of motorized aircraft would be prohibited, with the exception of allowing landings and takeoffs of non-UAS motorized aircraft at the following existing airstrips: Bluff Airport and Fry Canyon Airstrip.The agency may authorize case-by-case landings and takeoffs of motorized aircraft through formal permitting processes, where the use is beneficial to protecting BENM objects.	Same as Alternative C.	Public use would be limited to the following designated airstrips: Bluff Airport and Fry Canyon Airstrip. With the exception of these designated strips, aircraft takeoffs or landings would generally be prohibited within BENM. However, permitted landings/takeoffs may be allowed through formal authorizations, where the use is consistent with protecting BENM objects. Public use of BENM for UAS takeoffs and landings would generally be prohibited. However, permitted UAS landings/takeoffs may be allowed through formal authorizations, where UAS use is beneficial to protecting BENM objects. Agencies would consider seasonality of use for formal authorizations in collaboration with the BEC.
Per 2020 ROD/MMPs This plan would guide future implementation-level travel management planning, including mechanized and other modes of travel where the agencies would designate travel routes within BENM as per Presidential Proclamation 9558, as re-established by Proclamation 10285. This would be done outside of this BENM management planning process through a site-specific implementation-level travel plan. Until an implementation-level TMP or emergency order is completed for BENM, all current implementation-level route designations within areas designated in the MMP as OHV limited areas would remain in effect. This would include the routes designated in Appendix A, Figure 2-33, Alternative A, off-highway vehicle area designation. Management and use of routes on BLM-administered lands would be consistent with BLM Travel and Transportation Manual 1626, BLM Handbook 8342, and other applicable guidance. See Appendix H: Travel Management Plan Criteria.	Same as Alternative E (Appendix A, Figure 2-34, Alternative B, off-highway vehicle area designation).	Same as Alternative E (Appendix A, Figure 2-35, Alternative C, off-highway vehicle area designation).	Same as Alternative E (Appendix A, Figure 2-37, Alternative E, off-highway vehicle area designation).	Until an implementation-level TMP is completed, for OHV limited areas, route designations in the 2008 Monticello TMP (BLM 2008b) and 2008 Moab TMP (BLM 2008a) (for BLM-administered lands), as shown in Appendix A, Figure 2-37, Alternative E, off-highway vehicle area designation, and the current Motor Vehicle Use Map (for NFS lands) would remain in effect.
Per 2020 ROD/MMPs During implementation-level travel planning: Locate new roads and trails, including motorized and non-motorized trails, outside riparian areas unless alternative routes have been reviewed and rejected. Do not parallel streams when road/trail location must occur in riparian areas except where absolutely necessary. Cross streams at points that best complement riparian and aquatic ecosystems as well as road/trail and stream geometry. Locate crossings (fords) at points of low bank slope and firm surfaces to the extent feasible.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Implementation-level travel planning would not designate new motorized and mechanized routes in riparian areas, wetlands, and water resources unless necessary to ensure the protection of BENM objects and in collaboration with the BEC. Implementation-level travel management planning would ensure motorized and mechanized routes that parallel or cross streams would be located to best complement riparian and aquatic ecosystems as well as road/trail and stream geometry. This includes locating crossings (fords) at points of low bank slope and firm surfaces wherever practicable. See Appendix H: Travel Management Plan Criteria.
Per 2020 ROD/MMPs During implementation-level travel planning, designate routes, including hiking and equestrian trails, to avoid sensitive water and soil resources where monitoring has shown degradation from these recreational activities. These sensitive areas include the following: <ul style="list-style-type: none">Sensitive soilsSeeps and springs	Implementation-level travel planning would not designate new non-motorized and non-mechanized routes in riparian, wetland, and water resources in locations where monitoring has shown degradation to these resources, unless necessary to ensure the protection of BENM objects, or unless there are no other feasible alternatives, and those routes would not adversely impact BENM objects.	Same as Alternative B.	Same as Alternative E.	Same as Alternative B, except Implementation-level travel planning would not designate new non-motorized or non-mechanized routes in degraded riparian, wetland, and water resources unless necessary to ensure the protection of BENM objects. See Appendix H: Travel Management Plan Criteria.
No similar management.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Implementation-level travel planning would not designate new mechanized routes in sensitive soils unless necessary to ensure the protection of BENM objects. See Appendix H: Travel Management Plan Criteria.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
Per 2020 ROD/MMPs Implementation-level travel planning in SRMAs and extensive recreation management areas would recognize the San Juan County OHV route system and integrate it to the extent possible in travel management and recreational goals and objectives.	See Management Actions Common to All Action Alternatives.	See Management Actions Common to All Action Alternatives.	See Management Actions Common to All Alternatives.	See Management Actions Common to All Action Alternatives.
No similar management.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Maintenance: Designated routes could be maintained to meet public health and safety needs and/or to protect BENM objects. Deviations from current route maintenance levels on designated routes, to provide for public health and safety needs and/or to protect BENM objects, would be considered during plan implementation on a case-by-case basis. Improvements: Improvements to routes, including potential reroutes or alternative alignments, to provide for public health and safety needs and/or to protect BENM objects, would be considered during plan implementation on a case-by-case basis, in accordance with agency policy. For purposes of this management action, an "improvement" goes beyond preserving the status quo of the road or trail and includes the widening of the road or trail, the horizontal or vertical alignment of the road or trail, the installation of (as distinguished from cleaning, repair, or replacement in the kind of already existing) bridges, culverts, and other drainage structures, as well as any significant changes in the surface composition of the road or trail. See Appendix H: Travel Management Plan Criteria. See Section 2.4.19, Lands and Realty, for routes authorized with a ROW/SUP.
Per 2020 ROD/MMPs Any lands acquired by the BLM over the life of the RMP/EIS would be managed with the same OHV area designations of adjoining BLM-administered lands or as stated or implied in the land transfer. If clarification is absent, the BLM would manage the acquired lands as OHV limited. The type of limitation would be determined by implementation-level travel planning. Until that implementation-level travel planning is completed, the OHV limited use would continue in the same manner and degree consistent with the proper care and management of BENM objects.	Any lands acquired by the BLM and USDA Forest Service over the life of the RMP/EIS would be managed with the same OHV area designations of adjoining agency-administered lands or as stated in the land transfer decision. If clarification is absent, the agencies would manage the acquired lands as OHV limited. The type of limitation would be determined by implementation-level travel planning. Until that implementation-level travel planning is completed, the OHV limited use would continue in the same manner and degree consistent with the proper protection of BENM objects.	Same as Alternative B.	Same as Alternative B.	Acquired lands would be managed consistent with the same OHV area designations of adjoining or surrounding agency-administered lands or as stated in the land transfer decision.
Per 2020 ROD/MMPs New trails developed in riparian areas would be designed to minimize impacts to riparian function. Trails would cross streams at points that best maintain riparian and aquatic ecosystems as well as trail and stream geometry. Crossings (fords) would be located at points of low bank slope and firm surfaces to the extent feasible.	Existing non-motorized or non-mechanized trails in riparian areas and 100-year floodplains would be maintained as necessary in the same manner and degree as the original trail to provide continued public access, limit unnecessary social trails, and to prevent resource degradation (e.g., soil erosion). New non-motorized or non-mechanized trails developed in riparian areas and 100-year floodplains would be designed to protect PFC and BENM objects. Trails would cross streams at points that best maintain riparian and aquatic ecosystems. Crossings (fords) would be located at points of low bank slope and firm surfaces to the extent feasible.	Same as Alternative B.	Same as Alternative E.	No new trails would be developed in riparian areas or 100-year floodplains. Existing trails would be maintained as necessary to protect BENM objects. See Appendix H: Travel Management Plan Criteria.
Per 2020 ROD/MMPs During implementation-level travel planning, designate routes, including hiking and equestrian trails, to avoid sensitive water and soil resources where monitoring has shown degradation from these recreational activities. These sensitive areas include the following: <ul style="list-style-type: none">• Sensitive soils• Seeps and springs	Implementation-level travel planning would not designate non-motorized and non-mechanized routes in riparian, wetland, and water resources in locations where monitoring has shown degradation to these resources, unless necessary to ensure for the protection of BENM objects, or unless there are no other feasible alternatives, and those routes would not adversely impact BENM objects.	Same as Alternative B.	Same as Alternative B.	Implementation-level travel planning would not designate new motorized or non-motorized routes in riparian areas, 100-year floodplains, and perennial springs and seeps where monitoring has shown degradation to these resources necessary to protect BENM objects. See Appendix H: Travel Management Plan Criteria.
Per 2008 Monticello RMP Non-mechanized (e.g., hiking, equestrian, and backpacking)	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).	See Management Actions Common to All Action Alternatives (Section 2.4.21.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Non-mechanized travel is not restricted on public lands except where limited or prohibited to protect specific resource values, provide for public safety, or maintain an identified opportunity.</p> <p>Provide opportunities for non-mechanized travel (hiking) on all routes open to mechanized use. Manage routes to exclude motorized and mechanized use and provide opportunities for non-mechanized travel independent of motorized and mechanized routes.</p> <p>Limit non-mechanized travel on specific lands to designated routes for resource protection purposes.</p>				
Existing limitations on off-road travel for wood gathering could be modified as necessary to maintain long-term sustainability or facilitate wood gathering where resource impacts are not a concern (2020 ROD/MMPs).	Cross-country OHV travel for wood gathering would not be allowed on BENM. On NFS lands only: at the discretion of the Responsible Official, off-road travel would be allowed up to 150 feet off the road with proper authorization.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
No similar action.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Implementation-level travel planning would not designate non-motorized and non-mechanized trails in sensitive soils in locations where monitoring has shown degradation to these resources, unless necessary to ensure the protection of BENM objects, or unless there are no other feasible alternatives and those trails would be consistent with the protection of BENM objects.
No similar action.	No similar action.	No similar action.	No similar action.	Agencies would coordinate with the BEC and Tribal Nations to adapt trails, roads, and OHV routes (i.e., consider wildlife underpass and overpass infrastructure) to allow wildlife movement within existing or potential movement corridors. See Appendix H: Travel Management Plan Criteria.
No similar action.	No similar action.	No similar action.	No similar action.	In the Cedar Mesa: Parking for day and overnight use would be limited to designated parking areas at trailheads. Trails from designated parking areas would be designated and signed. Restrict OHV access to the rims of canyons and encourage access on foot. See Appendix H: Travel Management Plan Criteria.
No similar action.	No similar action.	No similar action.	Management of new and existing travel routes to protect crucial big game habitat. Agencies would not allow new road, trail, or other recreation development that would fragment or disturb big game fawning/calving habitat or State of Utah designated crucial winter range.	Manage new or existing travel routes to protect habitat for culturally and ecologically important species. Prohibit new roads, trails, or other recreation development that might fragment or disturb nesting, fawning, calving habitat; winter range; or habitat necessary for other vulnerable life stages of culturally and ecologically important species. See Appendix H: Travel Management Plan Criteria.

2.4.22. Livestock Grazing

2.4.22.1. GOALS AND OBJECTIVES

- Protect and restore healthy native rangelands.
- Implement livestock grazing management practices to meet standards for rangeland health in a manner that is consistent with the protection of BENM objects.
- Manage grazing to minimize or eliminate intrusion of nonnative grass and plant species due to grazing-related activities.
- Goals and objectives from the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, and 1986 Manti-La Sal LRMP are incorporated by reference, as consistent with Proclamation 10285 and protection of Monument objects for the No Action Alternative.

2.4.22.2. MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

- Manage livestock grazing, subject to appropriate terms and conditions, in a manner consistent with the protection of BENM objects, including during periods of drought.
- In collaboration with the BEC, develop grazing permit terms and conditions, monitor rangeland conditions and adapt grazing practices as necessary to maintain or make progress toward meeting rangeland health standards through incorporation of Traditional Indigenous Knowledge where applicable and consistent with protecting BENM objects.

- If monitoring indicates that domestic livestock grazing is adversely impacting the protection of BENM objects, appropriate changes to livestock grazing management would be used to mitigate those impacts in a manner that ensures protection of BENM objects.
- Ensure livestock grazing is implemented consistent with permit terms and conditions and annual instructions.
- Develop and implement allotment management plans (AMPs) for all allotments within BENM during the scheduled permit renewal process and in collaboration with the BEC. Development and implementation of AMPs would include analysis of the allotment, including range improvements, and ensure consistency with protection of BENM objects.
- Grazing is excluded from developed recreation facilities, which includes developed campgrounds, developed trailheads, and cultural sites that are Public Use (Developed). Grazing may be limited in areas to allow for resource rest.
- The agencies would continue to work with permittees to ensure that the installation, use, maintenance, modification, and/or removal of range improvements are consistent with protection of BENM objects. Federal regulations 43 CFR 4120 (BLM) and 36 CFR 222.9 (USDA Forest Service) describe the applicable responsibilities for the installation, use, maintenance, modification, and/or removal of range improvements.

2.4.22.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-21. Alternatives for Livestock Grazing

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>BENM would be available (BLM)/suitable (USDA Forest Service) for grazing with the following exceptions, which would be unavailable (BLM)/not suitable (USDA Forest Service) for grazing (Appendix A, Figure 2-43, Alternative A, grazing and trailing) (135,007 acres):</p> <ul style="list-style-type: none"> • BLM • Bridger Jack Mesa • Lavender Mesa • Developed recreation sites • Nine side canyons of Butler Wash • Comb Wash side canyons (Mule Canyon south of SR-95 and Arch, Fish, Owl, and Road Canyons) • Dark Canyon Plateau Area • Grand Gulch area (within the canyon) of Cedar Mesa • Five identified mesa tops (White Canyon area) • Slickhorn Canyon (within Perkins South Allotment) • USDA Forest Service • USDA Forest Service portion of Arch Canyon, including Texas and Butts Canyons (2020 ROD/MMPs) • Chippean Allotment • Woodenshoe Canyon/Trail • Cliff Dwellers Pasture RNA 	<p>In addition to those areas identified in Alternative A, allocate 28,054 acres (163,034 acres total) as unavailable/not suitable for livestock grazing in the following areas and/or pastures (Appendix A, Figure 2-44, Alternatives B, C, and E, grazing and trailing):</p> <ul style="list-style-type: none"> • BLM • Mikes Mesa • Chicken Corners • Lockhart Basin Butte • Salt Creek – Upper • South Six-Shooter • North Six-Shooter • Salt Creek Mesa-South • Tuwa Canyon (Natural Bridges) • Texas Canyon • Indian Creek – Lower • John’s Canyon – Upper and Lower • San Juan River – Lower • Butler Wash – Lower 1 • Butler Wash – Lower 2 • USDA Forest Service • Hammond Canyon • Upper Part of Dark Canyon • Chippean Canyon 	<p>Same as Alternative B</p>	<p>In addition to Alternative B, allocate 202,585 acres (359,201 acres total) as unavailable/not suitable for livestock grazing in the following areas and/or pastures; modify any existing term grazing permits, as applicable (Appendix A, Figure 2-45, Alternative D, grazing and trailing):</p> <p>BLM</p> <ul style="list-style-type: none"> • Butler Wash • Moqui Canyon – Lower • Dry Wash – Comb Pasture • Harts Draw Pasture • Road Canyon Pasture • Snow Flat Pasture • Slickhorn Pasture • Slickhorn Canyon Pasture • Happy Jack Pasture • Gravel Canyon Pasture • Horse Tanks Pasture • Short Canyon Pasture • Indian Creek – Middle Pasture • Indian Creek – Creek Pasture • Indian Creek – Drill Pasture • Indian Creek – Davis Pasture • Indian Creek – Lavender Canyon Pasture • Indian Creek – Corral Pocket Pasture • Point Lookout Pasture • John’s Canyon • Dry Wash and Bullfrog Pastures • Lime Creek – Upper • Harts Canyon <p>USDA Forest Service</p> <ul style="list-style-type: none"> • Dark Canyon upstream of Rig Canyon/Peavine Canyon • Tuerto Canyon • Milk Ranch Point 	<p>Same as Alternative B with the following exceptions:</p> <ul style="list-style-type: none"> • The agencies, working collaboratively with the BEC, would: <ul style="list-style-type: none"> ○ Prioritize the review and processing of grazing permits and leases, including compliance monitoring and resource assessments, to protect Monument objects. ○ Incorporate Traditional Indigenous Knowledge into all parts of the livestock grazing decision-making processes. ○ Coordinate with the BEC on opportunities for joint data collection and/or analysis. ○ Identify subareas in allotments necessary for closure (year-round or seasonal). ○ Reassess stocking levels, seasons of use, and management approach. ○ Identify resource thresholds, monitoring, and automatic responses related to land health and/or impacts to cultural and sacred resources. • Noncompliance with the terms and condition of a livestock grazing permit or lease would be addressed immediately, in accordance with applicable law and policy, and could include withholding issuance of the permit/lease, suspending the permit/lease, or cancelling the permit/lease.
<p>Per 2020 ROD/MMPs</p> <p>The following areas within BENM would be limited to trailing (3,952 acres) (Appendix A, Figure 2-43, Alternative A, grazing and trailing):</p>	<p>In addition to those areas identified in Alternative A, the following areas would be limited to livestock trailing only (5,218 BLM acres) Appendix A, Figure 2-44, Alternatives B, C, and E, grazing and trailing):</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative A, with the exception that it also includes (48,889 acres) (Appendix A, Figure 2-45, Alternative D, grazing and trailing):</p> <ul style="list-style-type: none"> • Bridger Jack Bench East Pasture (Indian Creek Allotment) 	<p>Same as Alternative B.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<ul style="list-style-type: none"> Shay Canyon (boundary area identified for trailing and is not the Shay Canyon ACEC boundary) Indian Creek from Kelly Ranch vicinity to NFS lands boundary (2020 ROD/MMPs) Fable Valley is limited to trailing only on an annual basis and grazing use under emergency conditions Moqui Canyon (Middle) restricted to trailing only except in the spring and fall for up to 1 to 2 weeks for gathering livestock prior to moving to and from these areas <p>Per 2008 Monticello RMP No grazing in Harts Canyon</p>	<ul style="list-style-type: none"> Moqui Canyon – Lower 		<ul style="list-style-type: none"> North Cottonwood Upper Pasture (Indian Creek Allotment) North Cottonwood Pasture (Indian Creek Allotment) Salt Creek – Cathedral Pasture (Indian Creek Allotment) Grand Flat Pasture (Lake Canyon Allotment) 	
<p>Should grazing permits or leases be voluntarily relinquished by existing holders, the Secretaries shall retire from livestock grazing the lands covered by such permits or leases pursuant to the processes of applicable law. Forage shall not be reallocated for livestock grazing purposes unless the Secretaries specifically find that such reallocation will advance the purposes of this Proclamation and Proclamation 9558 (Proclamation 10285).</p>	<p>Proclamation 10285 provides: "Should grazing permits or leases be voluntarily relinquished by existing holders, the Secretary shall retire from livestock grazing the lands covered by such permits or leases pursuant to the processes of applicable law. Forage shall not be reallocated for livestock grazing purposes unless the Secretary specifically finds that such reallocation will advance the purposes of this proclamation and Proclamation 9558." If a holder voluntarily relinquishes its grazing permit or lease, or portion thereof, the lands covered by such permit or lease, or portion of the lands, would automatically become unavailable for livestock grazing in accordance with Proclamation 10285. The assignment of a livestock grazing permit or lease from one person or entity to another, or waiver of a grazing permit or lease in preference of another person or entity, does not constitute a voluntary relinquishment and is not subject to the management actions included in this provision.</p> <p>Upon receiving a written voluntary relinquishment of an existing grazing permit or lease, the agencies would:</p> <ul style="list-style-type: none"> Verify that the permit or lease being voluntarily relinquished is valid and authorizes livestock grazing on federal lands in BENM. Provide a written acknowledgement of the voluntary relinquishment to the permit or lease holder. Update any applicable data systems, modify the allotment record, and update other applicable records upon relinquishment. Update the acreage figures in the BENM RMP to reflect that the lands covered by the voluntarily relinquished permit or lease are unavailable for livestock grazing via plan maintenance. Unless the forage associated with the subject lands is reallocated for livestock grazing purposes to specifically enhance the protection of BENM objects identified in Proclamation 10285, manage the lands previously subject to the voluntarily relinquished permit or lease consistent with the goals and objectives for Wildlife and Fisheries in Section 2.4.11.1. The Authorized Officer would prohibit uses that are inconsistent with the use of the subject lands being managed consistent with the goals and objectives for Wildlife and Fisheries in Section 2.4.11.1. Consistent with available resources, remove unnecessary range improvement projects on the lands covered by the voluntarily relinquished permit or lease and rehabilitate any water developments. Such removal actions may require NEPA review and decision-making. <p>In the case of common/shared allotments, the voluntary relinquishment of a grazing permit or lease by one permit or lease holder would result in a reduction of:</p> <ul style="list-style-type: none"> The overall authorized number of AUMs or HMs on the allotment as a whole. While the entire allotment would continue to be grazed by the remaining permit or lease 	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
	<p>holder(s), the voluntarily relinquished permit or lease would result in a reduction in the number of AUMs/HMs available for the allotment. The reduction would correspond to the number of permitted AUMs/HMs (including active and suspended AUMs/HMs) authorized under the voluntarily relinquished permit or lease. Increasing active AUMs/HMs on remaining permits or leases by converting suspended AUMs/HMs to active AUMs/HMs to replace the retired AUMs/HMs would not be allowed; or,</p> <ul style="list-style-type: none"> The overall authorized number of AUMs/HMs and the geographic area available for grazing on the allotment, when all the existing holders of a permit or lease pertaining to that allotment agree, in writing, that a specific geographic portion of the allotment is appropriate to retire due to the full or partial voluntary relinquishment of a holder's permit or lease. In such case, the agencies would honor the remaining permit or lease holder(s) agreement to no longer graze that geographic area and the overall authorized number of AUMs/HMs would be reduced, as described in the previous bullet. <p>A grazing permittee's or lessee's voluntary relinquishment of its livestock grazing permit or lease does not involve an agency decision and therefore, it does not require compliance with NEPA, and it cannot be protested or appealed under 43 CFR subpart 4160 or 36 CFR 214. A voluntary relinquishment and the resulting retirement of the subject lands from livestock grazing does not require the agencies to change the classification of any area within such lands that have been established as a grazing district under the Taylor Grazing Act. The United States is not obligated to compensate permittees/lessees for any interest in authorized range improvements used in conjunction with the relinquished permit or lease.</p>			
<p>Utilization levels would continue to be the same as those disclosed in the 2008 Monticello RMP and the 2020 ROD/MMPs as follows:</p> <p>Per 2008 Monticello RMP</p> <p>For BLM-administered allotments, desired utilization levels as management guidelines for key forage species would be identified as needed to monitor use levels on an allotment-specific basis to achieve desired future condition. Where utilization levels have not been established, a use level of 50% would be the management guideline. Utilization is the proportion or degree of current year's forage production that is consumed or removed by animals (including insects). Utilization data should be analyzed in conjunction with climate, actual grazing use, current or historic impacts (e.g., wildfire, livestock, wildlife, insects), and long-term trend data to help evaluate existing management and design future management to meet land use plan objectives.</p> <p>Per 2020 ROD/MMPs</p> <p>For allotments administered by the USDA Forest Service, proper use criteria (unless specified elsewhere in the 1986 Manti-La Sal LRMP or in an AMP for uplands are identified as 40% to 55% (season-long use), 45% to 60% (deferred rotation), and 55% to 65% (rest rotation) use of key species. Proper use criteria for riparian areas are identified as 50% to 60% (spring), 45% to 50% (summer), and 30% to 40% (fall) use or 4- to 5-inch stubble or regrowth of key species.</p>	<p>Same as Alternative A.</p>	<p>Utilization levels on key forage species would be identified on an allotment-specific basis. Livestock grazing levels would be managed to meet the goals and objectives in this plan. Key forage species would typically include native species but may include nonnative placeholder forage species as necessary to preclude the spread of noxious weeds.</p>	<p>Same as Alternative A except that, where not otherwise established, utilization levels would be 30% until monitoring data are used to identify an appropriate utilization level.</p>	<p>Utilization levels of key forage species would be identified on an allotment-specific basis. Utilization levels would be managed to meet the goals and objectives in this plan and implementation plans, as applicable. Utilization levels would be established within 2 years of the release of this RMP/EIS assessing appropriate utilization levels and baselines.</p> <p>Utilization levels would take forage needs of wildlife into consideration.</p>
<p>Per 2020 ROD/MMPs</p> <p>Develop off-site water sources where practicable to reduce impacts to riparian areas, seeps, and springs, and improve and increase grazing distribution within and across allotments. Identify grazing allotments that could benefit</p>	<p>Allow new water developments and modifications to existing water developments for livestock grazing purposes where needed to provide functional infrastructure for orderly administration and management of the rangelands and consistent with protecting BENM objects.</p>	<p>Prohibit new water developments and modifications to existing water developments for livestock grazing purposes, unless:</p> <ul style="list-style-type: none"> The primary purpose is to protect BENM objects; and 	<p>Prohibit new water developments for livestock grazing purposes.</p> <p>Prohibit modifications to existing water developments for livestock grazing purposes, unless:</p>	<p>Prohibit new water source development for domestic livestock unless necessary to protect BENM objects. Existing water developments for livestock or wildlife would be removed unless they protect BENM objects, where feasible. Enclosures or other physical barriers would be utilized to</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
from improved grazing distribution and prioritize these allotments for the construction of new water sources.	Existing water developments for livestock grazing purposes would be maintained in the same manner and degree as authorized, if consistent with protecting BENM objects. Existing water developments for livestock grazing purposes not consistent with protecting BENM objects would be removed or modified to be consistent with protecting BENM objects. Corresponding changes may be necessary to applicable livestock grazing permits.	<ul style="list-style-type: none"> BLM-administered lands only: A current (within the last 10 years) land health assessment has been completed, and, if needed, a causal factor determination has been made for the allotment or applicable watershed. As informed by the land health assessment and causal factor determination, the new/modified water development would support the achievement of the BLM Utah Rangeland Health Standards. An exception to this requirement could be approved for new/modifications to water developments to prevent imminent damage to BENM objects. <p>Existing water developments for livestock grazing purposes would be maintained in the same manner and degree as authorized, if consistent with protecting BENM objects.</p> <p>Existing water developments for livestock grazing purposes not consistent with protecting BENM objects would be removed or modified to be consistent with protecting BENM objects.</p> <p>Corresponding changes may be necessary to applicable livestock grazing permits.</p>	<ul style="list-style-type: none"> The primary purpose is to protect BENM objects; and BLM-administered lands only: A current (within the last 10 years) land health assessment has been completed, and, if needed, a causal factor determination has been made for the allotment or applicable watershed. As informed by the land health assessment and causal factor determination, the modified water development would support the achievement of the BLM Utah Rangeland Health Standards. An exception to this requirement could be approved for modifications to water developments to prevent imminent damage to BENM objects. <p>Livestock would be excluded from perennial surface water (except existing stock ponds) and associated riparian areas and springs.</p> <p>Existing water developments for livestock grazing purposes would be maintained in the same manner and degree as authorized, if consistent with protecting BENM objects.</p> <p>Existing water developments for livestock grazing purposes not consistent with protecting BENM objects would be removed. If not possible to be removed, the existing water development would be reclaimed and/or restored, as appropriate.</p> <p>Corresponding changes may be necessary to applicable livestock grazing permits.</p>	prevent livestock from directly accessing or impairing springs, seeps, groundwater-dependent ecosystems, and other sensitive riparian areas. Water wells, stock tanks, and catchments that are no longer in active use would be capped or covered for safety purposes. Grazing would be managed so as to reduce impacts to soil erosion and damage to BSCs and in a way that protects Tribal access to culturally important plants, including trees. Grazing would be managed to protect streams, springs, and other important riparian areas.
Per 2020 ROD/MMPs Any range improvements would avoid construction on cultural sites and would avoid creating concentrations of livestock on cultural sites.	Same as Alternative A with the following additions: Allow new range improvements and modifications to existing range improvements for livestock grazing purposes where needed to provide functional infrastructure for the orderly administration and management of the rangelands and consistent with protecting BENM objects. Existing range improvements for livestock grazing purposes would be maintained in the same manner and degree as authorized, if consistent with protecting BENM objects. Existing range improvements for livestock grazing purposes not consistent with protecting BENM objects would be removed or modified to be consistent with protecting BENM objects. Corresponding changes may be necessary to applicable livestock grazing permits.	Same as Alternative A with the following additions: Prohibit new range improvements or modifications to existing range improvements, for livestock grazing purposes, unless: <ul style="list-style-type: none"> The primary purpose is to protect BENM objects; and BLM-administered lands only: A current (within the last 10 years) land health assessment has been completed, and, if needed, a causal factor determination has been made for the allotment or applicable watershed. As informed by the land health assessment and causal factor determination, the new/modified range improvements would support the achievement of the BLM Utah Rangeland Health Standards. An exception to this requirement could be approved for new/modifications to range improvements to prevent imminent damage to BENM objects. <p>Existing range improvements for livestock grazing purposes would be maintained in the same manner and degree as authorized, if consistent with protecting BENM objects.</p> <p>Existing range improvements for livestock grazing purposes not consistent with protecting BENM objects would be removed or modified to be consistent with protecting BENM objects.</p> <p>Corresponding changes may be necessary to applicable livestock grazing permits.</p>	Prohibit new range improvements for livestock grazing purposes. Prohibit modifications to existing range improvements for livestock grazing purposes, unless: <ul style="list-style-type: none"> The primary purpose is to protect BENM objects; and BLM-administered lands only: A current (within the last 10 years) land health assessment has been completed, and, if needed, a causal factor determination has been made for the allotment or applicable watershed. As informed by the land health assessment and causal factor determination, the modified range improvements would support the achievement of the BLM Utah Rangeland Health Standards. An exception to this requirement could be approved for modifications to range improvements to prevent imminent damage to BENM objects. <p>Existing range improvements for livestock grazing purposes would be maintained in the same manner and degree as authorized, if consistent with protecting BENM objects.</p> <p>Existing range improvements for livestock grazing purposes not consistent with protecting BENM objects would be removed.</p> <p>Corresponding changes may be necessary to livestock grazing permits.</p>	New range improvements would only be allowed if they protect BENM objects, support sustainable grazing practices and reduce impacts to the cultural landscape, including vegetation, wildlife, soil, and other important ecological and cultural resources. Existing range improvements would be maintained only if they are consistent with the protection of BENM objects. Existing range improvements that are not consistent with the protection of BENM objects would be removed.
Per 2020 ROD/MMPs No new water developments for livestock or other improvements that would intensify or concentrate livestock use would be authorized within the South Milk Ranch Point pasture unit of the Babylon Allotment. Fences that protect objects would still be allowed.	Avoid new water developments for livestock or other improvements that would intensify or concentrate livestock use within the South Milk Ranch Point pasture unit of the Babylon allotment. Fences that protect BENM objects would still be allowed.	Same as Alternative B.	Prohibit new water developments for livestock grazing purposes (see management actions above).	Same as Alternative B.
Per 2020 ROD/MMPs Range resource management: Avoid trailing livestock along the length of riparian areas except where existing livestock trailing corridors occur. Rehabilitate existing livestock trailing corridors where damage is occurring in riparian areas. Implement BMPs if monitoring shows livestock are causing damage to riparian areas. If BMPs are ineffective, relocate	Avoid trailing livestock along the length of riparian areas except where existing livestock trailing corridors occur. Rehabilitate existing livestock trailing corridors where damage is occurring in riparian areas. Implement management actions if monitoring shows livestock are causing damage to riparian areas. If management actions are ineffective, prohibit trailing livestock along the length of riparian areas.	Avoid trailing livestock along the length of riparian areas. Rehabilitate existing livestock trailing corridors where damage is occurring in riparian areas. Implement management actions if monitoring shows livestock are causing damage to riparian areas. If management actions are ineffective, prohibit trailing livestock along the length of riparian areas.	Prohibit trailing livestock along the length of riparian areas. Rehabilitate existing livestock trailing corridors where damage has occurred in riparian areas.	Prohibit livestock trailing and grazing along the full length of riparian areas. Rehabilitate riparian areas where damage has occurred. Infrastructure may be developed, in collaboration with the BEC, to encourage cattle away from springs.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
livestock outside riparian areas if possible and when necessary to achieve riparian area goals.				
No similar management	<p>Within 3 years of the signing of the ROD, complete land health assessments and, if needed, causal factor determinations on the following allotments/areas:</p> <ul style="list-style-type: none"> • Comb Wash • Indian Creek • Slickhorn • White Canyon <p>The land health assessments and causal factor determinations would inform the BLM's full processing of livestock grazing permit renewals for allotments within those allotments/areas, which would be completed within 6 years of the signing of the ROD.</p> <p>If a land health determination indicates that grazing use is not consistent with the provisions of 43 CFR 4180, decrease permitted use in accordance with 43 CFR 4110.32 and make changes to grazing practices to support the achievement of the BLM Utah Rangeland Health Standards and ensure consistency with protecting BENM objects.</p>	Same as Alternative B.	<p>BLM-administered lands only:</p> <p>Within 10 years of the signing of the ROD, complete land health assessments and, if needed, causal factor determinations, and fully process all permit renewals across BENM.</p> <p>If a land health determination indicates that grazing use is not consistent with the provisions of 43 CFR 4180, decrease permitted use in accordance with 43 CFR 4110.32 and make changes to grazing practices to support the achievement of the BLM Utah Rangeland Health Standards and ensure consistency with protecting BENM objects.</p>	No similar management.
<p>Per 2020 ROD/MMPs</p> <p>Use natural topographic features (e.g., pour-offs, canyon walls) to the extent possible to mitigate direct adverse impacts to various resources from livestock in areas unavailable (BLM)/not suitable (USDA Forest Service) for grazing. Where necessary, fencing may be used to augment natural topographical boundaries. Areas made unavailable to grazing may be adjusted through plan maintenance in order to prioritize use of natural topographic features as barriers to reduce adverse impacts to resource.</p>	Management not carried forward.	Management not carried forward.	Management not carried forward.	Use natural topographic features (e.g., pour-offs, canyon walls) to the extent possible to mitigate direct adverse impacts to various resources from livestock in areas unavailable (BLM)/not suitable (USDA Forest Service) for grazing. Where necessary to protect the cultural landscape and/or objects, fencing may be required to augment natural topographical boundaries.
<p>Per 2008 Monticello RMP</p> <p>Manage grazing according to <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997).</p>	Management not carried forward.	Management not carried forward.	Management not carried forward.	Management not carried forward.
<p>Per 2008 Monticello RMP</p> <p>Maintain existing land treatments, to meet RMP objectives and <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997). Any new land treatments developed in addition to those listed would also be maintained as necessary to meet RMP objectives and <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i>.</p>	Management not carried forward. See Section 2.4.7, Vegetation.	Management not carried forward. See Section 2.4.7, Vegetation.	Management not carried forward. See Section 2.4.7, Vegetation.	Management not carried forward. See Section 2.4.7, Vegetation.
<p>Per 2008 Monticello RMP</p> <p>Modify and implement existing (Tank Draw and East Canyon) and new AMPs as necessary to meet RMP objectives and <i>Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah</i> (BLM 1997). Develop and implement 29 new AMPs and others identified on a site-specific basis, for which resource concerns develop that require such action.</p>	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).
<p>Per 2008 Monticello RMP</p> <p>Relinquishment of Preference</p> <p>Voluntary relinquishments of grazing permits and preference, in whole or in part, by a permittee in writing to the BLM would be handled on a case-by-case basis. The BLM would not recognize relinquishments that are conditional on specific BLM actions as valid, and the BLM would not be bound by them</p>	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).	See Management Actions Common to All Action Alternatives (Section 2.4.22.2).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>Per 1986 Manti-La Sal LRMP Range Resource Management</p> <p>Within the rangeland capability, provide forage to sustain the dependent livestock industry (Forest Service Manual 2203.1 Item 1.)</p> <p>Manage the range resource within its productive capabilities for grazing and browsing animals in harmony with other resources and activities to provide sustained yield and improvement of the forage resource. Encourage and coordinate other resource activities so as to maintain or enhance forage production.</p> <p>Place allotments under an approved management plan.</p> <p>Use Interdisciplinary teams to establish proper use criteria (R-4 Supplement No. 59 to Forest Service Manual 2214.11).</p> <p>Manage livestock and wild herbivores forage use by implementing proper use criteria as established in the AMP.</p> <p>Undeveloped Motorized Recreation (UDM) and Semi-primitive Recreation Use (SPR)</p> <p>Manage livestock use to be compatible with recreation use. Locate structural and design non-structural improvements to meet Visual Quality Objectives.</p> <p>General Big Game Winter Range (GWR)</p> <p>Manage livestock grazing to complement big game habitat.</p> <p>Establish proper use criteria that should maintain or enhance habitat for wildlife. Limit livestock use to this level.</p> <p>Production of Forage (RNG)</p> <p>Improve or maintain range condition to fair or better to balance livestock obligations and use with grazing capacities.</p> <p>Firm up capacities by evaluation methods identified in AMPs or if not completed by standards specified in Forest Service Handbook 2209.21 and/or increasing forage production to meet obligations through range improvements.</p> <p>Riparian Area Management Not-Mapped (RPN)</p> <p>Provide for proper stocking and livestock distribution to protect riparian ecosystems.</p> <p>Avoid trailing livestock along the length of riparian areas except where existing stock driveways occur. Rehabilitate existing stock driveways where damage is occurring in riparian areas. Relocate them outside riparian unit if possible and when necessary to achieve riparian area goals.</p> <p>Research, Protection, and Interpretation of Lands and Resources (RPI)</p> <p>Protect these areas from livestock use unless the objectives for the RPI unit allow grazing use.</p> <p>No livestock grazing is permitted in RNAs.</p> <p>Dark Canyon Wilderness Management (DCW)</p> <p>Manage forage uses and limit range improvements to be compatible with wilderness character.</p> <p>Special Land Designations</p> <p>Manage the forage resource on potential units and existing units consistent or compatible with range prescriptions from adjacent management units. On existing units, manage forage with an emphasis on establishment of vegetative cover and long-range rehabilitation to support appropriate range prescriptions.</p> <p>Location of Utility Corridors (UC)</p> <p>Manage the forage to be compatible with range prescriptions from adjacent management units. Manage</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
<p>forage with emphasis on maintenance or improvement of vegetative cover and long-range rehabilitation.</p> <p>Provide special management practices to restrict livestock trailing or bedding along corridors.</p>				
<p>Per 1986 Manti-La Sal LRMP Range Improvement and Maintenance</p> <p>Provide structural and non-structural range improvements needed to maintain or improve range conditions, as specified in AMPs.</p> <p>Complete project effectiveness analysis to determine investment priorities (Forest Service Handbook 2209.11).</p> <p>Construct and maintain structural improvements in accordance with USDA Forest Service standards (Forest Service Handbook 2209.23).</p> <p>Where site-specific developments adversely affect long-term production or management, those authorized to conduct activities would be required to replace losses through appropriate mitigations.</p> <p>Perpetuate non-commercial aspen communities as a forage source.</p> <p>Control and reduce noxious weeds and poisonous plants, using IPM techniques and strategies, including the use of herbicides, biological control agents, and/or mechanical or hand treatments.</p> <p>Control spread of fires, and then work on established populations.</p> <p>Apply herbicide treatments under the direction of certified applicators and following label instructions.</p> <p>Those authorized to conduct soil-disturbing activities would be required to control noxious weeds on the area disturbed during the life of the project.</p> <p>Developed Recreation Sites (DRS) Manage livestock grazing to reduce conflicts in existing and proposed recreation sites.</p> <p>Construct, as needed, fences of appropriate materials around developed sites.</p> <p>Exclude livestock from areas that cannot be maintained in Code-A-Site category Light, as a result of livestock grazing.</p> <p>Wood-Fiber Production and Harvest (TBR) Protect regeneration from unacceptable livestock damage. Proper livestock management methods would be included in AMPs and annual operating plans to protect regeneration. Permittees would be held responsible for damages resulting from negligence.</p> <p>Utilize transitory forage that is available when demand exists, and where investments in regeneration can be protected.</p> <p>Vary utilization standards with grazing system and ecological condition. Specify standards in the AMP.</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>	<p>See Management Actions Common to All Action Alternatives (Section 2.4.22.2).</p>
<p>No similar management.</p>	<p>Same as Alternative E.</p>	<p>Same as Alternative E.</p>	<p>56,347 AUMs on BLM-administered lands and 7,908 HMs on NFS lands would be available for grazing.</p>	<p>62,035 AUMs on BLM-administered lands and 10,659 HMs on NFS lands would be available for grazing.</p>
<p>No similar management.</p>	<p>The agencies would strive to mitigate drought impacts while promoting land health and protecting BENM objects.</p> <p>Drought management policy would implement an annual three-phase approach, organized using the annual seasonal cycle of livestock grazing use on public lands, to assess drought-caused circumstances or resource conditions, and implementing responsive management actions: 1) Pre-</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Develop a formal drought management plan that is based on the best available Western scientific information and Traditional Ecological Knowledge specific to the region and regarding climate change.</p>

Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E
	<p>Season; 2) Early to Mid-Season; and 3) Late Season to Post-Season.</p> <p>1) Pre-Season: Identify resources or BENM objects being adversely impacted by drought. Prioritize emphasis areas to focus monitoring. Information data sets include, but are not limited to, U.S. Drought Monitor, U.S. Drought Portal, rain gauges, precipitation indices, snowpack, soil moisture, weather information, timing and type of precipitation, vegetation conditions, and use levels. Inform grazing permittees about current and projected drought conditions and outline potential responsive management actions. As monitoring data indicate the need, adjust grazing use in response to drought impacts (e.g., reducing livestock numbers, shortening season of use, altering pasture move dates, changing pasture rotations, water hauling, and closing allotments).</p> <p>2) Early to Mid-Season: Obtain and review updated drought information. Evaluate on-the-ground resource conditions and livestock distribution. As monitoring data indicate the need, adjust grazing use in response to drought impacts.</p> <p>3) Late Season to Post-Season: Obtain and review updated drought information. Evaluate on-the-ground resource conditions and livestock distribution. As monitoring data indicate the need, adjust grazing use in response to drought impacts during the current season or subsequent seasons.</p>			
No similar management.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Do not authorize maintenance feeding (provision of fodder that serve the bulk of dry matter forage) on public lands, regardless of drought, unless an emergency arises (e.g., deep snow prevents stock from being removed from BENM). Remove livestock on rangelands that do not supply the dry matter diet requirements of livestock.
No similar management.	Same as Alternative E.	Same as Alternative E.	Same as Alternative E.	Educate the public about avoiding conflict with livestock; manage livestock grazing to avoid conflicts with recreational users to the extent possible.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1. Assumptions

Assumptions for analysis are developed to assist in determining the potential impacts of the alternatives on the affected environment. They are presumed true for the purpose of comparing alternatives; do not constrain or define management; and are based on expected trends, demands on resource uses, observations, historical trends, and professional judgment. Assumptions are generally made for the expected life of the BENM RMP/EIS, unless otherwise stated. Assumptions applicable to all resources and resource uses are described below. Resource-specific assumptions are described in the sections that follow.

The following general assumptions were used in the environmental effects analysis:

- Implementation-level actions necessary to execute the planning-level decisions in the RMP/EIS would be subject to subsequent decision-making processes that comply with applicable laws, including NEPA.
- The decisions proposed in the alternatives apply to BLM-administered and NFS lands and areas that require federal permitting or authorization; however, cumulative impacts analyses also consider decisions made for lands or resources managed by other entities or individuals.
- Implementation-level and planning-level actions would be subject to valid existing rights and would comply with all federal laws, regulations, and policies. Although the agencies may not unilaterally add a new stipulation to a valid existing right, the agencies can subject development of valid existing rights to reasonable conditions as necessary to protect Monument objects through the application of conditions of approval at the time of permitting.
- Sufficient funding and personnel would be available to implement the RMP/EIS.
- BMPs are measures applied on a site-specific basis to reduce or eliminate adverse impacts. For any proposed activities in the Planning Area, appropriate BMPs would be selected on a case-by-case basis to meet the site-specific requirements of the project and local environment from the list of BMPs provided in Appendix G.

3.2. Availability of Data and Incomplete Information

The best available data were used in the preparation of the analysis contained in the RMP/EIS. Where appropriate, quantitative indicators, such as data associated with the BLM's Assessment, Inventory, and Monitoring (AIM) Strategy (BLM 2022), are presented for each resource or resource use to further describe current conditions and potential impacts; however, certain information is unavailable, or site-specific information is required for analysis. In some instances, a lack of quantitative or location-specific data requires that some impacts are discussed only in qualitative terms. Subsequent project-level NEPA documents will provide the opportunity to collect and analyze site-specific data.

Management methods involving Traditional Indigenous Knowledge have been considered throughout the analysis; however, in many cases, specific details of Traditional Indigenous Knowledge to be applied are not included. Following future coordination with the BEC and where

appropriate, relevant Traditional Indigenous Knowledge will be specified and analyzed in project-level NEPA analysis.

3.3. Traditional Indigenous Knowledge and the Bears Ears Landscape

Important to any discussion of land management is that historical truths are inseparable from ancestral knowledge, traditional oral history, and geographical stories. This knowledge, along with associated ceremonial and ritualistic activities [is the basis] for understanding the relationships and origins of environmental ties and their perseverance, preservation, balance, and integrity over, through, and as part of space and time.

Bears Ears Inter-Tribal Coalition. A Collaborative Land Management Plan for The Bears Ears National Monument. (2022:1)

The proposed management actions and the analysis of their potential effects presented in this document combine information from Traditional Indigenous Knowledge and a Western scientific approach. The 2022 BEITC LMP “emphasizes a holistic approach to all resources that gives primacy to indigenous knowledge and perspectives on the stewardship of the Bears Ears landscape.”

According to Indigenous cultures, cultural resources and natural resources are not separate categories. An individual depends on other living plants, animals, and the land for subsistence and to maintain cultural and religious ties to certain places, like BENM, with special value to Tribal Nations; thus, the natural resources gathered, hunted, prayed to, and walked on become cultural resources. Resources and places on the landscape cannot be considered separately from the landscape as a whole. From an Indigenous perspective, the natural world is much more than just a physical realm to sustain the material needs of life. The natural resources of the Bears Ears cultural landscape—water, land, wind, sound—are imbued by powerful religious, artistic, and other cultural meanings significant to Indigenous communities with ancestral and present-day ties to this region (see Appendix L).

3.3.1. Importance of Traditional Indigenous Knowledge

Traditional Indigenous Knowledge and its centrality to the management of BENM was firmly established by Presidential Proclamation 10285. The Proclamation states, “In recognition of the importance of knowledge of Tribal Nations about these lands and objects and participation in the care and management of the objects identified above, and to ensure that management decisions affecting the monument reflect expertise and traditional and historical knowledge of Tribal Nations, a Bears Ears Commission (Commission) is reestablished in accordance with the terms, conditions, and obligations set forth in Proclamation 9558 to provide guidance and recommendations on the development and implementation of management plans and on management of the entire monument.” Incorporation of Traditional Indigenous Knowledge in Monument planning and in the disclosure and evaluation of the potential environmental impacts of BENM management alternatives is expected and was fully mandated at the Monument’s inception and restoration.

Traditional Indigenous Knowledge as a way of knowing, as is true for most epistemological systems, is not easily summarized in a few sentences. Considerable variation exists between traditional societies in the observations made, the connections between those observations that are established, and how the meaning of those connections is interpreted. The Office of Science and Technology Policy from the Council on Environmental Quality (CEQ) defines Traditional Indigenous Knowledge in its November 30, 2022, *Guidance for Federal Departments and Agencies*

on Indigenous Knowledge. This memorandum, intended for the heads of federal departments and agencies, defines Traditional Indigenous Knowledge as, “a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes and Indigenous Peoples through interaction and experience with the environment” (Prabhakar and Mallory 2022). Berkes (2018:8) further describes Traditional Indigenous Knowledge as “a way of knowing; it is dynamic, building on experience and adapting to changes. It is an attribute of societies with historical continuity in resource use on a particular land.”

3.3.2. *Integrating Traditional Indigenous Knowledge and Western Scientific Approaches*

Traditional Indigenous Knowledge is oftentimes contrasted directly with Western science in ways that are oppositional and not productive. The primary objective for incorporating both a Western scientific perspective and a Traditional Indigenous Knowledge perspective is to use both approaches most effectively in the co-production of knowledge for problem solving. In the pages that follow, the agencies have worked to reframe their analyses to include Western science and Traditional Indigenous Knowledge.

Both approaches have at their core the same primary objective—to provide an understanding of the observed world and our experiences within (Berkes 2018:8). Berkes (2018:10) states, “Both western and indigenous science may be considered, along with art, the result of the same general intellectual process of creating order.” Although similar in anticipated outcome, and with many points of intersection in how each works to create order, Traditional Indigenous Knowledge and Western science are distinct.

Traditional Indigenous Knowledge systems and Western science both begin with observations of natural phenomena. They differ in the processes by which connections between observations are made and the perspective from which observations are interpreted to create order out of disorder. Western science generally follows one of two pathways to draw conclusions from observations. Inductive reasoning begins with a set of observations that are subsequently connected to one another by applying or developing theory and concludes with a set of inferences that explain the original set of observations. Deductive reasoning begins with the theory in mind, collects observations, and then draws a set of inferences. Both approaches are inherently linear, with a clear beginning, middle, and conclusion. Oftentimes the conclusions drawn lead to new questions and prompt new observations, making the Western scientific process very linear but iterative. In contrast, production of knowledge in many Traditional Indigenous Knowledge systems is circular. Observations are collected; connections between observations are made; and explanations as to the meaning of those connections are developed. In Western science, the linear process would stop at that point, with new questions likely prompting a new iterative process. A Traditional Indigenous Knowledge system does not end with the development of an explanation; instead, a continuous process of observation, connection, and interpretation is ongoing. The difference is subtle between the linear but iterative approach of Western science and the ongoing circle of knowledge production among Traditional Indigenous Knowledge systems, but that difference is profound.

The second significant way in which Western science and Traditional Indigenous Knowledge differ is in the perspective from which explanations and inferences are made from observations. The production of Traditional Indigenous Knowledge is inherently culturally embedded. The observations made, the connections between observations, and the explanations for those connections in Traditional Indigenous Knowledge systems cannot be effectively abstracted from the cultural traditions from which the observations were precipitated. In contrast, idealized Western science is intended to be inherently objective and disconnected from the cultural context of its practitioners.

It is the common goal of creating order from direct observations of natural phenomena that connects Traditional Indigenous Knowledge and Western science. In speaking of the commonalities between these approaches, Berkes (2018:32) states, “Native Americans, in common with contemporary ecologists, see the world as dynamic, contingent, and constantly changing.” In using both Traditional Indigenous Knowledge and Western scientific approaches the agencies take advantage of an opportunity to make better decisions that are informed by both.

3.3.3. Perspectives from Bears Ears Inter-Tribal Coalition

The five Tribes of the BEITC—Hopi, Navajo Nation (Diné), Pueblo of Zuni, Ute Indian Tribe, and Ute Mountain Ute—collaborated on the 2022 BEITC LMP. In the plan, each Tribe described their sense of connection to the Bears Ears region. Although the following summaries are presented individually, they demonstrate the overarching cultural importance of the Bears Ears area and the shared connection to it that many Tribes feel.

3.3.3.1. HOPI TRIBE

Hopi traditional knowledge describes *Hopitutskwa*, a vast ancestral homeland in which Hopi clans settled as they migrated to their present-day villages in northeastern Arizona. The Hopi people continue to use springs and other resources in areas they formerly occupied, return to shrines for ceremonial and other reasons, and commemorate the Bears Ears landscape through songs and prayers. Research conducted by the Hopi Cultural Preservation Office in Glen Canyon National Recreation Area (NRA) shows that at least 26 Hopi clans have ties to the Colorado River and San Juan River corridors and the Bears Ears landscape. Place names memorialize Hopi connections to the area. For example, the names *Hoon’naqvut* and *Honnaqvuvu* (Bears Ears Buttes), *Honn’muru* (Bear Mound), and *Honn’tsomo* (Bear Hill) describe the twin buttes for which the Monument was named. Hopi cultural advisors explain that in Hopi tradition, this area is associated with the Bear Clan, and the image of the bear resembled by the two buttes was likely a significant factor in this clan’s settlement there in the past. The Hopi people verify their clan histories and preserve their ties to BENM by visiting the area’s rock writings, artifacts, and landmarks (see Appendix L).

3.3.3.2. NAVAJO NATION

The Bears Ears area (*Shashjaa’*) is a vital part of many Navajo ceremonies that keep people and communities healthy. Oral traditions passed down from ancestors document Navajo occupation and use of the Bears Ears area, and many of the place names for locations in BENM are mentioned in ceremonies. Common themes in the many stories shared during the creation of the 2022 BEITC LMP are the area’s importance for trade and for hunting, gathering, and collecting materials. Traditional herbalists collect area plants for use in ceremonies and personal health and well-being. Historically, Navajos would move north to collect pinyon nuts when crops farther south failed to provide enough food. Clan histories are important to the Navajo people, and for generations, they have told how the clans originated on the landscape. In this way, the landscape itself has become a part of Tribal history. The Bears Ears area is especially cherished by the Navajo communities nearby. Many Navajos are deeply connected to the Bears Ears and act as stewards for these ancestral homelands (see Appendix L).

3.3.3.3. PUEBLO OF ZUNI

A sense of place is a vital part of Zuni culture and carries with it psychological and emotional attachments. The Bears Ears landscape (*Ansh An Lashokdiwe*) is important for the Zuni people because it is part of the traditional Zuni cultural landscape, which covers all of the territory crossed by their ancestors during migrations to the center place. Zuni origin history reflects the depth of the

connection the Zuni people have to BENM and is physically reflected in ancestral rock marking locations, among other things. The historical and cultural topics expressed in rock markings include clan identification, boundary negotiations, year counts, political positions and statuses, personal signatures and insights, deities, animal tracking, and communications intended for descendants. For example, Zuni traditional knowledge experts interpret one well-known archaeological site in the area as documenting a significant historical event—the migration of Zuni ancestors through the BENM area. Stretching across 7 meters of sandstone rock face, this rock writing panel depicts four lines of small anthropomorphic figures converging on a circle (see Appendix L).

3.3.3.4. UTE INDIAN TRIBE

The ancestral lands of the Ute people are vast, reaching far beyond current reservations to cover all of Colorado and Utah, the northern parts of Arizona and New Mexico, the southern part of Wyoming, and east into the Southern Great Plains. The Ute ancestors lived in and traveled through the Bears Ears area (*Kwee yah gut Nah Kav*) for thousands of years, following ancient seasonal rounds from high to low elevations to hunt and trap animals and gather plants. Over these millennia, the people developed traditions and histories that codified sources of water and food and the proper ways to treat and process these resources.

The Ute Indian Tribe is committed to sustaining the heritage, culture, and identity that is contained in the landscapes that surround *Kwee yah gut Nah Kav*, or the Bear's Ears. . . . The Ute continue to pass on cultural knowledge through programs such as language classes, cultural camps, and other interactive education programs that serve as an important means to help the young people reconnect to, and learn about, ceremonial places throughout their traditional homeland. (see Appendix L:16)

The interconnectedness of Ute culture with the natural world is significant in the Ute worldview. The distinctive landscape and natural resources of the Bears Ears area connect today's Ute people to their ancestral lands and are vital to the continuance of Ute traditions and customs (see Appendix L).

3.3.3.5. UTE MOUNTAIN UTE

The *Nūche* (Ute people) have always lived in the Bears Ears area (*Kwiyagatu Nukavachi*), which is a small but important part of the expansive traditional Ute territory. The San Juan River defined the territories of different bands of Utes and served as boundaries between the Utes and other people, including the Navajo, during conflict. Drainages helped define travel corridors, and the place names of many creeks, rivers, and drainages reflect their importance to Ute history and lifeways. The varying elevations throughout the Bears Ears landscape allowed people to move seasonally. The higher altitudes were used for hunting in the summer, and winter camps were set up in places like Beef Basin, Cottonwood Canyon, Allen Canyon, Butler Wash, and the area around today's town of Bluff. The Bears Ears—*Kwiyagatu Nukavachi*—is known as the place where bears first come out of their winter hibernation. This event is significant to the traditional Bear Dance, during which various Ute bands would gather to camp in the spring and share songs created or practiced over the winter to show respect for the spirit of the bear (McPherson 2011). For the Ute people, being able to access various landscapes and resources is essential to traditions. The Bears Ears region is critical to these traditions and a significant part of people's lives (see Appendix L).

3.4. Natural Environment

In light of the following perspective shared in the 2022 BEITC LMP, the resources listed in Section 3.4 are those that could most be considered part of the natural environment.

From a Native perspective, the natural world is much more than just a physical realm to sustain the material needs of life. The natural resources of the Bears Ears cultural landscape – water, land, wind, sound – are imbued by powerful religious, artistic, and other cultural meanings significant to Native communities with ancestral ties to this region. There are meaningful names for places on the land and they are linked with significant deities, stories, and past events. These places can be topographic features, but also can include areas containing important natural resources – hunting grounds, distant forests, lithic quarries, marshes, agricultural soils, etc. (see Appendix L:20)

3.4.1. *Paleontological Resources and Geology*

3.4.1.1. **AFFECTED ENVIRONMENT**

The Planning Area is located near the western margin of the Colorado Plateau uplift and comprises a series of plateaus, buttes, and mesas that reflect the type and structure of the underlying geological strata. The Colorado Plateau is characterized by relatively flat-lying strata that have been locally offset and folded during vertical movements between north- and south-oriented blocks in the Earth's crust. This uplift and folding have created spectacular scenery for which the area is known worldwide. The diverse geological features such as Comb Ridge, the Bears Ears Buttes, North and South Six Shooter Peaks, Lavender and Bridger Jack Mesas, and the massive Wingate Sandstone cliffs include unique sequences of exposed sedimentary rock layers. In addition to the areas listed above, Proclamation 10285 also lists several unique geological features, including mesas, towers, arches, hoodoos, and cliffs found in Indian Creek Canyon, Cedar Mesa, Mancos Mesa, Beef Basin, the Abajo Mountains, Elk Ridge, the Dark Canyon and Dry Mesa complex, and Valley of the Gods, as well as many others; these are hereafter referred as unique geological features. Near the center of the Planning Area are the iconic Bears Ears Buttes—twin buttes of Wingate Sandstone that overlie the Triassic Chinle Formation.

The Planning Area includes bedrock geological units (i.e., mappable groups, formations, members, deposits) ranging in age from the late Pennsylvanian to the Late Cretaceous, as well as unconsolidated Neogene deposits approximately dating back to at least the Pliocene and early Pleistocene (Appendix A, Figure 3-1, Geological units in the Planning Area). The older Pennsylvanian/Permian and Triassic rocks, which include the Cutler Group, the Moenkopi Formation, and the Chinle Formation, are the dominant geological units within the Planning Area. The remainder of the Monument is dominated by younger sedimentary units of Jurassic age, which include the Morrison Formation and the Glen Canyon Group. Fossil-bearing sedimentary rocks range in age from the late Pennsylvanian to the Late Cretaceous, with some overlying Quaternary (Pleistocene and Holocene) deposits. Fossils preserved in these geological units include invertebrate, vertebrate, and plant fossils. Vertebrate fossils include the body remains of fish, amphibians, reptiles (including dinosaurs), and mammals, as well as their tracks and traces. These fossils can occur in rocks of Pennsylvanian, Permian, Triassic, Jurassic, Cretaceous, and Quaternary age and include specimens unique to this area (Gay et al. 2020).

The first Western scientific work from this area was the description of a phytosaur (crocodile-like reptile) from the Chinle Formation of San Juan County (Lucas 1898). Since this time, several additional research teams have come to the area intermittently to search for fossils. The types of

fossils preserved in a sedimentary rock sequence depend on the geological age of the rocks in which they occur and the environment in which the sediments that make up the rocks accumulated. The types of rocks that are exposed at the surface of an area and can potentially yield fossils are the result of geological history through processes such as original deposition, structural deformation, and erosion. Portions of the Planning Area, such as the northeast corner in and around Indian Creek, have a higher number of known vertebrate and trace fossils; this is due in part to a higher number of field surveys that have taken place in units where trace and vertebrate fossils are commonly found.

A paleontological resources classification system utilized by management agencies, including the BLM and USDA Forest Service, is the PFYC system, which classifies areas according to their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils (BLM 2022a). Under the PFYC, geological units are classified based on the relative abundance of vertebrate fossils or uncommon invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher number indicating a higher potential for fossils. This classification is best applied at the geological formation or member level. It is not intended to be an assessment of whether important fossils are known to occur occasionally in these units (i.e., a few important fossils or localities scattered widely throughout a formation does not necessarily indicate a higher class), nor is it intended to be applied to specific sites or areas. The classification system is intended to provide baseline guidance for assessing and mitigating impacts to paleontological resources. In many situations, the classification should be an intermediate step in the analysis and should be used to assess additional mitigation needs. Classifications are from very low potential to very high potential to contain paleontological resources (PFYCs 1–5), as well as unknown potential (PFYC U). PFYC classes for the Planning Area are shown in Appendix A, Figure 3-2, Potential Fossil Yield Classification of the Planning Area.

Approximately 32% of the lands within the Planning Area have very high or high potential (PFYC Class 5 or 4); 53% have moderate potential (PFYC Class 3); 8% have low or very low potential (PFYC Class 2 or 1); and 7% have unknown potential (PFYC Class U) for fossils (BLM 2022b). Table 3-1 lists the geological units, PFYC ranking, and acres of each geological unit in the Planning Area. Table 3-2 summarizes the Planning Area by PFYC rank and landownership. In addition to paleontological potential, the accessibility to the exposures may impact the potential for finding, documenting, collecting, and researching specimens. Some of the geological units, including the Cutler Group and the Moenkopi and Morrison Formations, have vast exposures with multiple access points in the Planning Area. Conversely, exposures of other units, including those of the lower Jurassic Wingate and Navajo Sandstones, which contain some of the first dinosaurs, form steep slopes that are difficult to access. The Kayenta Formation of the Glen Canyon Group is also difficult to access and is thin, making the potential for surface discoveries more challenging. Some of the Chinle Formation badlands are accessible by roads originally constructed to access the area for the study of uranium deposits—otherwise these badlands would be nearly impenetrable (Gay et al. 2020).

Table 3-1. Geological Units within the Planning Area

Geological Unit Name	Map Abbreviation(s)	Age	PFYC	General Fossil Description*	Acres
Artificial fill	Qf	Holocene	2	Disturbed sediment. Fossils unlikely but if present are out of geological context.	2
Younger alluvial, eolian, and colluvial deposits	Qac, Qae, Qal1, Qace, Qae	Holocene	2	Sediments are generally too young to contain fossils.	951

Geological Unit Name	Map Abbrevlation(s)	Age	PFYC	General Fossil Description*	Acres
Mixed eolian, colluvial, alluvial stream, and alluvial fan deposits, often eolian sand at the surface covers the alluvial deposits	Qace, Qae, Qe, Qea, Qeaf, Qeat, Qes	Pleistocene to Holocene	2	No known paleontological resources. Pleistocene deposits could contain fossils. Unofficial mentions of fossils in gravels in the area.	74,332
Alluvial fan, stream, eolian, and colluvial deposits	Qaec, Qaeo, Qal, Qa, Qao, Qe	Pleistocene to Holocene	U	No known paleontological resources. Pleistocene deposits could contain fossils. Unofficial mentions of fossils in gravels in the area.	92,581
Mixed alluvial fan, eolian, colluvial, and talus deposits, including some older deposits	Qafe, Qafeo	Pleistocene to Holocene	3	Pleistocene deposits could contain fossils.	1,152
Talus deposits with eolian sand	Qmte, Qmt	Pleistocene to Holocene	U	In situ fossils unlikely. Fossils, if observed, will be out of their original geological context.	747
Mass-movement landslides, slumps, and talus	Qms, Qmsb, Qmst, Qls	Pleistocene to Holocene	2	In situ fossils unlikely. Fossils, if observed, will be out of their original geological context.	16,516
Older alluvial and eolian deposits	Qaco	Pleistocene	U	Pleistocene deposits could contain fossils. Unofficial mentions of fossils in gravels in the area.	42
Terrace deposits	Qat	Pleistocene	U	Pleistocene deposits could contain fossils. Unofficial mentions of fossils in gravels in the area.	63
Intrusive rocks – Tertiary	Ti	Paleocene to Pliocene	1	No fossils, igneous rock formation.	1,513
Late Cretaceous Formations, including Mancos Shale	K2	Cretaceous, Mesozoic	3	Numerous types of vertebrates, invertebrates, and plants in these geological units. Types depend on specific geological unit.	205
Early Cretaceous Formations, including Naturita (unit previously assigned to the Dakota) and Cedar Mountain (or Burro Canyon) Formations	K1	Cretaceous, Mesozoic	5	Numerous types of vertebrates, invertebrates, and plants, including footprints of theropods, sauropods, and ornithischians in the Burrow Canyon Formation, unidentified leaves in the Naturita Formation, and petrified wood from ferns in both formations.	3,632
Morrison Formation, including Bluff Sandstone Member	J2, Jmbl	Jurassic	5	Diverse vertebrate fauna famous for dinosaurs, including body fossils of ornithischians, sauropods, and theropods, as well as footprints and trackways. Other fossils include conchostracans, fish, squamates, sphenodontian, mammaliaforms, crocodyliform footprints, invertebrate traces, wood, palynomorphs, and multiple taxa of leaves, including those of ferns, ginkgophytes, and conifers.	49,546
Salt Wash Member, Morrison Formation	Jms	Jurassic	4	Less fossiliferous than other members, still contains important localities. Fossils include petrified wood.	675
Wanakah Formation	Jw	Jurassic	2	Few fossils except bioturbation (trace fossils) and algal mats.	1,533
Entrada Sandstone	Je	Jurassic	3	Mostly tracks and traces, including burrows and dinosaur footprints, possibly a small crocodyliform.	220

Geological Unit Name	Map Abbrevlation(s)	Age	PFYC	General Fossil Description*	Acres
Early Jurassic Formations, including Summerville, Entrada, and Carmel Formations	J1	Jurassic	4	Mostly tracks, including important theropod tracks in Summerville Formation and some marine fossils. Carmel Formation includes extensive invertebrate assemblages in marine facies and dinosaur footprints in costal deposits.	28,662
Carmel Formation, undivided	Jc	Jurassic	3	Extensive invertebrate fossil assemblages and dinosaur footprints.	5,074
Dewey Bridge Member of Carmel Formation	Jcd	Jurassic	2	No fossils documented but are possible in the paleoenvironment.	357
Navajo Sandstone	Jn	Jurassic	4	There are burrowed and rooted horizons, as well as fossiliferous playa lake facies that contain large conifer logs, leaves, ostracods, invertebrate and vertebrate burrows, and diverse assemblages of vertebrate tracks. Vertebrate body fossils are rare. The Planning Area contained the early sauropodomorph dinosaur <i>Seitaad ruessi</i> , and there are additional vertebrate taxa, including other sauropodomorphs, a theropod, crocodylomorphs, and actinopterygian fish.	36,172
Limestone and dolomite beds in Navajo Sandstone	Jnl	Jurassic	3	Fossiliferous playa lake facies.	8
Kayenta Sandstone	Jk	Jurassic	4	Unionid bivalves, petrified wood, and a tetrapod rib. Vertebrates south of the Planning Area include hybodont and osteichthyan fishes, amphibians, caecilians, turtles, crocodiles, dinosaurs, cynodonts, mammals, and more. Diverse and abundant track assemblages are common.	55,136
Wingate Sandstone	JTRw, Jw	Triassic to Jurassic	3	Vertebrate body fossils are limited to the Chinle-Wingate contact. Numerous tracks on slump blocks, but none in their original stratigraphic positions.	16,193
Glen Canyon Group (Navajo, Kayenta, Wingate, Moenave Formations) and Nugget Sandstone	Jg	Jurassic	4	Numerous types of vertebrates, invertebrates, and plants in these geological units. Types depend on specific geological unit. See individual units for details.	86,764
Chinle Formation, undivided	Tr2	Triassic	3	Diverse (see other Chinle Formation table cells below for specifics).	28,790

Geological Unit Name	Map Abbreviation(s)	Age	PFYC	General Fossil Description*	Acres
Chinle Formation includes Church Rock, undivided Owl Rock, Petrified Forest, and undivided Moss Back and Monitor Butte Members, as well as unmapped Kane Springs beds	TRc, TRcc, TRcl, TRcmm, tRcop, Trcu	Triassic	5	Very diverse flora and fauna, including the first vertebrate fossil, a phytosaur, documented in the Planning Area region. Other fossils include vertebrate tracks, lung fish burrows, gastropods, molluscs, crustaceans, temnospondyl amphibians, unknown vertebrate bones and teeth, and a diversity of leaves, including ferns and conifers. Church Rock Member preserved articulated skeletons of actinopterygian and at least one type of coelacanth, as well as possibly a very rare procolophonid parareptilia (or from Owl Rock Member). Rare occurrences described from the Monitor Butte Member are bones from at least crocodylomorphs and from Petrified Forest Member are a possible theropod vertebrae and claws and an ornithischian right mandible.	67,655
Chinle Formation includes Moss Back and Shinarump Conglomerate members	TRcms, TRcs	Triassic	3	Wood and leaves, including ferns and conifers. Vertebrates include metoposaurid temnospondyls, phytosaurs, and aetosaurs. Invertebrates include bivalves, gastropods, and ostracods.	37,832
Moenkopi Formation	Tr1	Triassic	4	Numerous types of vertebrates, invertebrates, and plants in these geological units. Specific types depend on specific geological unit. See individual units for details.	34,279
Moenkopi Formation, including Hoskinnini Sandstone and Upper Members	TRm, Trmu, TRmh	Triassic	4	Abundant tracks and traces such as archosauriform reptile swim tracks; plant fragments; fish, including actinopterygian scales, vertebrae, and teeth; amphibian bones.	39,058
White Rim Sandstone (or Formation) and Arkosic facies, Cutler Group	Pwr, Pca	Permian	2	No fossils documented but are possible in the paleoenvironment.	38,518
Organ Rock Shale (or Formation), Cutler Group	Po	Permian	3	Fish, amphibians, including large-bodied taxa (e.g., <i>Diadectes</i> and <i>Seymouria</i>) and the sphenacodontid <i>Ctenospondylus</i> , tetrapod trackways, and plants.	50,941
Cedar Mesa Sandstone, Cutler Group	Pcm	Permian	3	Osteichthyans, amphibians, amniotes dominated by the synapsid <i>Sphenacodon</i> ; leaf and stem impressions, including conifers, and permineralized logs.	290,392
Cutler Group, including White Rim Sandstone, Organ Rock Shale, Cedar Mesa Sandstone, as well as lower Cutler beds	P1	Permian	3	Diverse (see other Cutler Group and lower Cutler bed table cells above and below for specifics).	360,884
lower Cutler beds, including those units mapped as Rico, Elephant Canyon, and Halgaito Formations	PIPhgu, lphgu, lphgl, Pcl, PIPcl	Upper Pennsylvanian to Permian	4	Vertebrate fauna, including xenacanth sharks, Chondrichthyans, actinopterygians, temnospondyl amphibians (e.g., <i>Eryops</i>), non-mammalian synapsids, conodonts, marine invertebrates, and plants, including leaves and stems of conifers, ferns, and lycopsids.	30,643
Lower Cutler beds, including unit mapped as Rico Formation	PP	Upper Pennsylvanian to Permian	3	Specific types depend on specific geological unit. See individual units for details.	30,571

Geological Unit Name	Map Abbreviation(s)	Age	PFYC	General Fossil Description*	Acres
Honaker Trail Formation, Hermosa Group	lph, lpht, lphtl, lphtu	Upper Pennsylvanian	4	Shark teeth, conodonts, and diverse marine invertebrate fauna, including fusulinaceans, brachiopods, rugose corals, and bryozoan.	4,444
Honaker Trail and Paradox Formations, Hermosa Group	P	Upper Pennsylvanian	2	Specific types depend on specific geological unit. See individual units for details.	4,491
Paradox Formation, Hermosa Group	lpp	Upper Pennsylvanian	3	Poorly fossiliferous salt, some important palynomorphs and interbeds with invertebrates; biohermal dolomitic limestones; diverse microfossils (used in biostratigraphy), and conodonts.	188

Sources: BLM (2022b); Gay et al. (2020).

Note: A total of 82 acres are mapped as water and are not included in this table.

* Within and adjacent to the Planning Area, pack rat middens are known to contain bones and teeth of small mammals, avifauna, and herpetofauna. These deposits are younger than the geological units in which they are found. Thus, they are not included within this classification system.

Table 3-2. Acres of Potential Fossil Yield Classification in the Planning Area

PFYC Classes	BLM	State	USDA Forest Service*	Private	Total Acres
PFYC 1	0	0	1,513	0	1,513
PFYC 2	109,817	9,327	2,789	4,853	126,786
PFYC 3	633,425	55,958	97,244	2,708	789,335
PFYC 4	196,507	26,216	124,949	2,222	349,894
PFYC 5	56,370	8,054	54,708	756	119,888
PFYC U	79,951	12,914	7,909	2,572	103,346
Total	1,076,070	112,469	289,112	13,111	1,490,762

Note: A total of 82 acres are mapped as water and are not included in this table.

* Including wilderness areas.

The Planning Area contains exceptional paleontological resources, with ongoing related scientific research that involves excavations and discoveries (see Gay et al. 2020 for details). Fossils occur subsurface in unconsolidated or bedrock units, weathering on the surface in recent colluvium, or in private and public collections. These exceptional paleontological resources are accessible due to the excellent exposures of their host geological formations. Traditionally, the BLM and USDA Forest Service have measured fossil condition with a single indicator: Are fossils in collections or the field in good condition? Beyond their simple presence in the landscape as objects integrated into the geology, however, they derive their value to humans as objects of scientific, public, hobby, or artistic use and are acknowledged and respected by Indigenous peoples as ancient beings from long ago with their own intrinsic value. In other words, the true indicators of resource condition and effective management are how fossils are being utilized by various interest groups that are legally permitted to use them. Although this is more labor intensive to implement and assess, it is imperative that special designation areas like the Planning Area strive toward such holistic active management. Such approaches are appropriately used in many NPS units that manage fossil resources of similar or lesser significance.

Since the 1990s, research productivity has been increasing in the Planning Area, and based on Utah Geological Survey (UGS) locality data from the last few years, it appears that it will continue to increase. A study conducted in 2020 indicated that 30% of the paleontological publications from

the Planning Area focused on the Upper Triassic Chinle Formation (Gay et al. 2020). A review of UGS fossil locality data through 2022 reveals a total of 949 paleontological localities recorded within the Planning Area through 2022 (Hayden 2023). Of the 949 fossil localities identified, 615 contain vertebrate fossils, 93 contain invertebrate fossils, 108 contain plant fossils, and 108 contain trace fossils (or a combination of these types). Information from this database, supplemented by publications and BLM paleontologist experience, document that vertebrate surface fossils (which the BLM considers of scientific significance) are known from at least nine formations in the Planning Area.

The BLM has identified four objectives for the management of fossil resources on lands it administers: 1) locating, evaluating, managing, and protecting fossil resources; 2) facilitating appropriate scientific, educational, and recreational uses of fossils; 3) ensuring that proposed land uses do not inadvertently damage or destroy important fossil resources; and 4) fostering public awareness of the nation's rich paleontological heritage (BLM 1998). As described in the 2022 BEITC LMP, "there are many traditional stories about animals that are not around today, and it is understood that these beings existed before humans. These creatures, as evidenced today as fossils, should be acknowledged and respected."

On federal lands, petrified wood is managed by the Petrified Wood Act of 1962, which established petrified wood as a mineral material under the Materials Act of 1947; however, under 30 USC 601, the disposal of mineral materials, including petrified wood, is prohibited in national monuments. The BLM and USDA Forest Service receive several inquiries each year regarding public fossil collecting. Although casual collection of a reasonable amount (i.e., not to exceed 100 pounds by weight per year, not to exceed 25 pounds per day) of "common" non-vertebrate (i.e., invertebrate and plant) paleontological resources for non-commercial personal use is afforded to the public via the Paleontological Resources Preservation Act (PRPA) on USDA (i.e., NFS) and U.S. Department of the Interior (DOI) lands (e.g., BLM and Bureau of Reclamation), casual collection is not allowed in monuments within NFS lands, or in other NFS lands or BLM-administered lands closed to casual collection through separate authority established by the federal land manager of the overseeing bureau (36 CFR 291.11 and 291.12, and 43 CFR 8365.1-5). The federal land manager will determine which "common" invertebrate and plant paleontological resources are considered scientifically rare or unique; thus, casual collection of rare invertebrate or plant paleontological resources may be prohibited. Casual collection of most vertebrate paleontological resources, usually considered to be of scientific, educational, and/or cultural significance, is prohibited from NFS lands and BLM-administered lands under the PRPA (see below regarding permitted collection).

To protect paleontological resources, casual collection of any invertebrate and plant paleontological resources within the 2020 ROD/MMPs area, as well as on NFS lands within the Monument, is not allowed. Conversely, within the lands managed by the 2008 Monticello RMP, casual collectors may retain reasonable amounts of common invertebrate and plant paleontological resources, following guidance regarding casual collection established in the PRPA.

Because of their overall scarcity and scientific, educational, and or cultural value, vertebrate paleontological resources, including trace fossils (including but not limited to footprints, burrows, and dung), are only allowed to be collected under a scientific/research permit issued by an Authorized Officer (BLM)/Responsible Official (USDA Forest Service). Collection of rare invertebrate and plant paleontological resources would also require a scientific/research permit issued by an Authorized Officer (BLM)/Responsible Official (USDA Forest Service). In the absence of separate authoritative guidance, the PRPA has established permit requirements on lands administered by the USDA (i.e., NFS) and DOI (e.g., BLM and Bureau of Reclamation); these would apply to BLM-administered lands not included in the 2020 ROD/MMPs and 2008 Monticello RMP. Within the 2020 ROD/MMPs, a scientific/research permit for collecting any paleontological resource is

required, and within the 2008 Monticello RMP, a scientific/research permit is required for the collection of vertebrate and rare invertebrate or plant paleontological resources. Additionally, the 2008 Monticello RMP requires a permit for the casting of fossils (specifically vertebrate paleontological resources and including some trace fossils). Although the 2020 ROD/MMPs does not provide guidance regarding the casting of paleontological resources, casting of paleontological resources would follow permit stipulations issued by the Authorized Officer (BLM)/Responsible Official (USDA Forest Service).

Within the Planning Area, numerous institutions have conducted paleontological and geological field expeditions and research partnerships with agencies (e.g., BLM, U.S. Geological Survey [USGS], UGS). These institutions facilitate cleaning and stabilizing fossils, curating important specimens, field collecting significant specimens, providing exhibits and interpretation, and conducting research. The higher the number of partnerships, the greater benefit the public and the fossils will receive. These partners do not necessarily need financial support. The BLM issued approximately two paleontology permits during 2022 specifically for the Planning Area. The BLM also issued approximately 95 consulting and surface collecting permits in Utah, many of which were statewide and included portions of the Planning Area. The USDA Forest Service issues only project-specific permits, and none were issued for the Planning Area in 2022. In addition to paleontological discoveries made as part of formal survey and research or previous casual collecting activities, a portion of documented localities within the Planning Area are inadvertent discoveries made by the public while recreating followed by proper reporting to a land management agency.

Fossil theft and vandalism, particularly vertebrate fossil collection, have been known to occur within the Planning Area. Only a small number of these occurrences are ever prosecuted. The commercial value of fossils also means that fossils on federal lands are increasingly subject to theft and vandalism. These crimes reduce scientific and public access to scientifically significant and instructive fossils and destroy the contextual information critical for interpreting the fossils. Illegal casting of dinosaur tracks, as well as theft of dinosaur bone, is a particular problem within the Planning Area. The PRPA states that a person may not excavate, remove, damage, or otherwise alter or deface any paleontological resources located on federal land; provides criminal penalties that include fines; and discusses when fines can be doubled, civil penalties, and rewards for information about an incident (16 USC 70aaa-5-470aaa-7).

Efforts to share scientific discoveries within the Planning Area are twofold: scientific publication and public exhibits and interpretation. Special public events and public outreach via lectures, schoolroom demonstrations, field tours, and the like keep the public informed on issues and discoveries and gain public support of resource management. Approximately one exhibit is completed every few years for public exhibition. Some of these are portable, whereas others are fixed at institutions like visitor centers, in situ fossil localities, and museum exhibit halls. For example, along the short trail at Butler Wash, dinosaur tracks can be viewed in the Jurassic Entrada Sandstone. In 2018, interpretive signage was installed that discusses the paleontological history of the area and provides information on modern local plant and animal life. Additionally, there are dinosaur tracks at the bottom of the streambed in the Shay Canyon ACEC, and visitation to this ACEC has increased over the last few years. The geological features in the Valley of the Gods ACEC are a prime destination for many, and visitor numbers there continue to increase. Visitors like the opportunity to combine short hikes with the chance to increase their education about resources, and fossil sites often provide a good combination of shorter hikes and potential for quality interpretation. The public interest in paleontological destinations is also high, and the six interpreted public fossil sites in the Moab FO to the north receive considerable visitation by the public and school groups, along with organized commercial and educational tours. Collection space at most museums holding specimens from the Planning Area is limited. Additionally, Tribal values prioritize the remains of ancient beings staying in situ (see Appendix L).

Public interest in paleontology is high. Evidence of this interest is found in sustained high attendance at museums, rock and fossil shows, national parks and monuments, and tourist attractions featuring fossils. Museums continue to develop new exhibits and courses dedicated to interpreting the evolution of life and other aspects of paleontology. In addition, a plethora of websites have been developed by museums, universities, professional paleontologists, and amateur and commercial collectors that are available for viewing by the public. Some of these websites tell where fossils can be visited and/or collected on public lands. These sites record high numbers of hits, or visits, by the public but may foster problems with vandalism and illegal collection of fossils from public lands.

Visitor use is increasing in the Planning Area. Hikers, mountain bikers, and other outdoor enthusiasts will continue to unintentionally discover fossils; some of these discoveries will be passed on to the appropriate agencies and some will not. This will increase the probability of unique or significant paleontological and geological features and materials being affected. There are currently two paleontological destinations in the Planning Area: the Butler Wash Dinosaur Tracksite and Shay Canyon. It is anticipated that the public will continue to look for additional opportunities to visit paleontological resources in their original setting, and additional interpretive locations may be necessary to accommodate new discoveries and increasing visitation.

3.4.1.2. ENVIRONMENTAL CONSEQUENCES

3.4.1.2.1. Issues

- How would proposed management decisions regarding paleontological resource management (such as curation, protection, survey, collection, outreach, and interpretation) impact paleontological resources, research communities, local communities, and visitor experience?
- How would proposed land use allocations and discretionary uses impact paleontological resources?
- How would proposed land use allocations and discretionary uses impact unique geological features?

3.4.1.2.2. Impacts Common to All Alternatives

Under all alternatives, continued scientific work by qualified researchers and work by Traditional Indigenous Knowledge holders on public lands would add further knowledge about the area's paleontological resources, resulting in opportunities for improved future management decisions and protection of these non-renewable resources. Although specific goals, objectives, and management direction vary slightly between Alternative A and the action alternatives, many of the key elements are the same. These include a focus on fostering public awareness and the identification of paleontological sites and specimens appropriate for research, protection, conservation, and interpretation (or public access).

Under all alternatives, management direction includes a focus on proactive inventory and conservation research or interpretation within areas mapped as PFYC Class 4 and 5 geological units. Coordination with agencies, the BEC, academic institutions, interested stakeholders, and appropriate state and local governments, including counties and municipalities, is consistent under all alternatives.

Management common to all alternatives includes agency collaboration with the BEC to provide protection, preservation, restoration, and overall management of BENM paleontological resources while promoting and facilitating scientific investigation of paleontological resources and providing

for traditional and/or cultural uses. This collaboration with the BEC would likely result in enhanced protection for and more thorough understanding of the paleontological resources within the Planning Area.

Under all alternatives, management would use the PFYC system throughout the Planning Area and protocols to direct inventory, collection, and protection of paleontological resources; public involvement; community interpretation; and monitoring of conditions and trends. Both Alternative A and the action alternatives mention the development of a catalog of field locations of baseline inventories, annual inventory monitoring and collection, and the development of a paleontological resources implementation plan that outlines inventory, research, protection, and collection management strategies. Mitigation of impacts to paleontological resources would be considered in management decisions under all alternatives. Actions that could affect paleontological resources would be assessed (e.g., prior to any surface disturbance), and the following would be undertaken: an assessment, including determining PFYC of geological units involved in the activity; a compilation of known paleontological resources in the area; and a consideration of potential effects based on the nature of the activity. Activities that would disturb geological units of PFYC Class 4 or 5 would typically require—and those with PFYC Classes 3 and Unknown class could require—an on-the-ground evaluation by a permitted qualified paleontologist. Once this assessment is completed, a mitigation plan would be developed to protect paleontological resources that would include avoidance, pre-disturbance salvage, professional monitoring during construction, and stop work authorizations if paleontological resources are uncovered.

Limiting the extent of surface disturbance in BENM (e.g., withdrawal from mineral entry) combined with general paleontological management would support the protection of paleontological resources from new major development and disturbance.

Under all alternatives, any management decisions that include increased areas of allowed surface disturbance, such as construction, ROW leasing, increases in recreation, and increases in OHV use, could affect paleontological resources. Unmitigated surface-disturbing activities could dislodge or damage paleontological resources and features that were not visible before surface disturbance. Crushing, breaking, or displacement of paleontological resources could result in the permanent loss of the resources, the scientific data they could provide, and the associated contextual data. Where surface disturbance is not mitigated or reclaimed, paleontological resources could be subjected to long-term damage or destruction from erosion. If surface disturbance is regulated and proper mitigation and preservation processes are followed, a possible benefit of these activities is that they could expose scientifically significant fossils that would otherwise remain buried and unavailable for scientific study.

If surface-disturbing activities and human use are unmitigated, they could also impact unique geological features; however, mitigation for impacts to unique geological features is usually included at the implementation level. Without mitigation, these features could be permanently altered or modified if they shift, move, or crack due to changing conditions from ground disturbance or visitor use. Delicate rock features can be particularly vulnerable to damage due to their delicate nature. Sandstone, especially the Wingate Sandstone found in the Indian Creek area, can be vulnerable to degradation from recreation when the rock is wet. Larger features, such as arches and bridges, are generally less susceptible to impacts brought about by landscape-level management actions. The potential for impacts to any kind of geological features varies by alternative, depending on the overlap of ground disturbance or visitor use areas with geological units that contain these features.

Actions that provide further human access to BLM-administered and NFS lands and lead to activities like vandalism and unauthorized collection could also impact paleontological resources.

These impacts could be reduced through actions such as enforcement of existing laws, resource monitoring, and mitigation that could include limiting or regulating access. With programs targeted toward education and outreach, the impact of human recreation to paleontological resources could be limited. Additionally, through the discovery of previously unknown paleontological resources, positive impacts could occur to these resources if proper laws are followed and authorities are notified. Such fossils, if collected properly and curated into the museum collection of a qualified repository, would be available for future scientific study and education.

Per Proclamation 10285, disposal of lands within BENM is not allowed, except possibly by exchange that furthers the protective purposes of BENM. Thus, to complement or enhance existing BENM objects, land exchange and land acquisition from willing landowners could occur under all alternatives. If BLM-administered or NFS lands are disposed of and removed from federal ownership, they no longer retain any BLM or USDA Forest Service protection for paleontological resources. Paleontological resources on land that would be retained (or acquired) by the BLM or USDA Forest Service would be protected by federal laws and policies protecting paleontological resources on BLM-administered or NFS lands.

Managing and protecting natural environments and ecosystems (e.g., soils, vegetation, forests, riparian areas, floodplains, WSAs) and wildlife habitats could further reduce erosion within these environments and thereby decrease impacts to paleontological resources. In some cases, management of these other resources could require additional assessment prior to paleontological excavation (e.g., on slopes greater than 30%) or after an excavation is initiated, but not completed, within a specific period (2 or 3 years).

Vegetation Management

Vegetation management actions may impact paleontological resources. Vegetation removal can increase erosion and exposure of underlying paleontological resources in the area. Additionally, vegetation treatments that use heavy machinery, such as drill seeding, chaining, or mastication, can destroy unknown paleontological resources.

Recreation and Visitor Services

Areas managed for recreation, such as the Butler Wash Dinosaur Tracksite and Shay Canyon hiking trails, could have increased risk for direct, indirect, and inadvertent damage to paleontological resources from concentrated recreation and increased localized visitor use. Recreational activities could physically alter exposed or shallow paleontological resources, leading to damage from erosion and unauthorized collection and vandalism; however, because these risks occur in concentrated areas like trails, BENM managers could better manage recreation in ways that minimize the potential for damage to paleontological resources compared to other unregulated recreation areas where effects are more difficult to anticipate, monitor, and mitigate. Prior to the creation or expansion of areas managed and developed for specific recreation, a paleontological resource assessment would evaluate the underlying geological units for paleontological potential and address further needed assessment, avoidance, or mitigation. Impacts within areas managed for recreation could be further mitigated through limiting OHV travel, monitoring of hiking and biking trails, and designating camping areas, especially in or near geological units of PFYC Classes 4 and 5. Overall, recreational use can improve knowledge of paleontological resources if federal laws, regulations, and policies are followed, and the public is educated on these processes. Given current visitor trends, human activity will increase within the Planning Area both in and out of areas formally managed for recreation. These increased actions could uncover previously unknown paleontological resources. If the discoveries are handled properly, they could add to the paleontological knowledge of the region; however, this public discovery and proper handling of

paleontological resources would rely on BLM-supported or USDA Forest Service-supported community engagement and education on the preservation of the resource, along with collaboration with the BEC and holders of Traditional Indigenous Knowledge regarding the values of these resources.

Lands with special designations, including RNAs, are afforded special management measures designed to protect a variety of resource values. Because this management typically results in regulated use and limits human-caused surface disturbance, these decisions could also protect potential paleontological resources within these areas. All alternatives would include the Cliff Dwellers Pasture RNA. This RNA contains geological units with PFYC Class 4, so there would likely be enhanced protection of paleontological resources in this area. Like areas with stringent VRM classifications, special designation areas (including ACECs, WSAs, and WSRs) are afforded special management measures designed to protect a variety of resource values. Management measures vary but generally include stringent VRM classifications, surface use restrictions, ground disturbance restrictions, motorized and OHV travel prohibitions, annual monitoring, and other restrictions on development and resource use. Management of these areas would further regulate use and limit human-caused surface disturbance.

Paleontological resources in these areas would be preserved in situ or would be collected only through an approved paleontological resources use permit. New discoveries from development would be less likely than in other portions of the Planning Area, and permits for scientific uses would be considered if these uses are compatible with the resource values that the designation is protecting.

Management of WSRs would help to reduce erosion and help rivers maintain their natural channel. Under all alternatives, designated WSRs cross less than 1% of the Planning Area (10,204 acres), and the geological units and associated PFYC values do not vary by alternative. Because these locations do not vary by alternative, the potential for impacts to paleontological resources based on the PFYC does not vary by alternative.

Most recreation uses and management actions are unlikely to impact geological resources in the Monument. Rock climbing is the only form of recreation that is likely to have impacts to geological resources due to improperly placed gear damaging rocks or from climbing on wet sandstone, which could damage and break rocks.

Lands and Realty

Areas open for ROW authorization could have more ground disturbance from possible surface-disturbing activities than areas with ROW avoidance or exclusion areas. To reduce the potential for impacts to paleontological resources from ROW actions, paleontological resource evaluations and subsequent mitigation could be completed. Additionally, grants for ROWs contain stipulations that require grant holders to cease activities and report any paleontological resources that are discovered. Agencies would collaborate with the BEC on lands, realty, and cadastral actions.

Travel and Transportation

Allowing travel in areas with underlying rock units of PFYC Classes 4 and 5 could result in impacts to paleontological resources due to increased surface disturbance and increased public access to these areas. Conversely, restricting travel to designated routes could help to limit new areas of erosion and surface disturbance in PFYC Class 4 and 5 geological units. Increased public awareness measures and community education on identifying fossils, including proper protocols

for reporting discoveries to authorities if paleontological resources are found, could reduce the impacts to these resources.

Livestock Grazing

Construction of structures to support livestock grazing (e.g., stock ponds, dams, roads) would increase surface disturbance and could impact paleontological resources. Management decisions related to grazing may also impact paleontological resources. PFYC Class 4 and 5 areas are often areas of exposed bedrock that contain minimal forage or are located on steep slopes and are therefore often unappealing for livestock grazing; however, in PFYC Class 4 and 5 areas that do not have these characteristics, livestock grazing can reduce vegetation within an area and could cause increased erosion of the soil and exposure of paleontological resources underlying the area. Livestock also could trample and destroy any paleontological resources if these resources are present at or near the surface. Management decisions that reduce acreage open to livestock grazing would likely result in reduced impacts to paleontological resources.

Visual Resources

VRM management decisions could indirectly impact paleontological resources in specific areas. Where minimal visual change from human activity is allowed (VRM Class I), known and unknown paleontological resources are less likely to be impacted by these activities. Areas where moderate modifications of the existing landscape are allowed (VRM Class III) have a higher potential for surface-disturbing activities, increased human activity, and impacts to paleontological resources. There are no VRM IV areas allowed under any alternative. The greatest impacts to paleontological resources from VRM management decisions would be in PFYC Class 4, 5, or U areas. The BLM would manage impacts as previously discussed for surface disturbance and increased human activities.

Fuels and Fire

Wildfires can adversely affect surface and shallowly buried paleontological resources, especially when they occur on steep slopes where vegetation has been previously burned. In such cases, soil stability is compromised, causing a higher chance for increased erosion. Fire and fuels management could reduce this risk of direct and indirect impacts to paleontological resources from wildfire, but vegetation management that includes ground disturbance could directly impact paleontological resources. The magnitude would vary by alternative depending on the methods authorized.

3.4.1.2.3. Impacts under Alternative A

Under Alternative A, paleontological resources would continue to be managed in accordance with the 2020 ROD/MMPs, 2008 Monticello RMP, 2008 Moab RMP, and 1986 Manti-La Sal LRMP as amended, except where those management decisions do not align with Proclamation 10285. Under Alternative A, there are no defined goals, objectives, or management directions that discuss geological resources (or unique geological features). On lands managed by the 2020 ROD/MMPs and the 1986 Manti-La Sal LRMP, casual collection of fossils and petrified wood would be prohibited. On lands governed by the 2008 Monticello RMP and 2008 Moab RMP, recreational collectors may collect and retain reasonable amounts of common invertebrate and plant fossils for personal, noncommercial use; however, collection and casting of invertebrate and plant fossils would be allowed by permit only. Collection of vertebrate fossils would be allowed only under a permit issued by an Authorized Officer (BLM)/Responsible Official (USDA Forest Service). Casting of vertebrate fossils, including dinosaur tracks, would be prohibited unless under a scientific or

research permit issued by the BLM Utah State Office. Allowing casual collection on lands governed by the 2008 Monticello and Moab RMPs could result in impacts from collectors as they extract fossil resources. Without permits for fossil collection it is not possible to track and understand what is being removed from federal lands. As a result, the scientific study and educational opportunities from fossils removed through casual collection is lost. Many people, however, enjoy casual collection of fossils, and maintaining this access could benefit public recreation.

Vegetation Management

Under Alternative A, vegetation management would include all available tools, including mechanical methods. The use of heavy mechanical tools can destroy unknown paleontological resources.

Recreation and Visitor Services

Under Alternative A, recreational areas would include 12 SRMAs, two ERMAs and three RMZs not within an SRMA. Within the cumulative SRMAs, there are 79,850 acres of PFYC Classes 4 and 5, with the RMZs within the SRMAs having a total 9,275 acres of PFYC Classes 4 and 5. Of the two ERMAs, the Monticello ERMA contains more PFYC Class 4 and 5 areas, totaling 162,644 acres, than the BENM Indian Creek SRMA, which has 19,020 acres of PFYC Classes 4 and 5. The RMZs not within a SRMA have a total of 20,813 acres of PFYC Classes 4 and 5. Under Alternative A, the Monticello ERMA would be managed under the 2008 Monticello RMP.

Although SRMAs are like ERMAs in that management focuses on recreation, in SRMAs, the predominant management and land use focus of the area could place restrictions on other resource uses. Potential for impacts to unknown paleontological resources increases with the amount of area and the PFYC value of the geological unit exposed within the recreation area and varies by the type and intensity of recreation uses and development. For example, continued surface disturbance, followed by subsequent erosion, from such surface-disturbing activities as OHV open travel (see paragraph below) could have an impact to unknown paleontological resources in these areas.

Under Alternative A, access to all access points, trails, and climbing routes would remain open; however, if site-specific impacts exist, the closure or rerouting of access is permissible. This would limit the protection of paleontological resources or unique geological features until after impacts have occurred or started to occur. Impacts to unique geological resources could include improperly placed climbing gear damaging rocks or people climbing on wet sandstone, which could damage and break rocks. Should these impacts occur, closures for site-specific impacts could help prevent additional damage to unique geological features or paleontological resources from damage.

Lands and Realty

Under Alternative A, the BLM would designate 54% (734,447 acres) of the Planning Area open to ROW authorization, and of lands open to ROW authorization, approximately 41% (303,782 acres) are PFYC Class 4 and 5 areas. Areas open for ROW authorization within PFYC Classes 4 and 5 could be subject to a variety of potential surface-disturbing activities that could result in impacts to paleontological resources. Under Alternative A, 33% (449,283 acres) of the Planning Area would be within ROW exclusion areas, of which only 15% (67,904 acres) are of PFYC Classes 4 and 5, that would have limited or no surface disturbance or potential disturbance of paleontological resources; 13% (180,329 acres) of lands in the Planning Area are ROW avoidance areas, of which only 34% (60,784 acres) are of PFYC Classes 4 and 5.

Travel and Transportation

Under Alternative A, there would be 928,080 acres managed as OHV limited areas and 436,075 acres managed as OHV closed. Approximately 83% (360,765 acres) of PFYC Classes 4 and 5 are in OHV limited areas, and approximately 17% (71,496 acres) of PFYC Classes 4 and 5 are in areas managed as OHV closed. Allowing travel in areas with underlying rock units of PFYC Classes 4 and 5 could result in impacts to paleontological resources due to increased surface disturbance and increased public access to these areas. Conversely, restricting travel to designated routes could help to limit new areas of erosion and surface disturbance in PFYC Class 4 and 5 geological units. Furthermore, under Presidential Proclamations 9558 and 10285, new roads and motorized trails would only be constructed to protect BENM objects and public safety, which would limit the designation of new routes and the expansion of the travel network. This would further limit the potential to impact undiscovered paleontological resources. Increased public awareness measures and community education on identifying fossils, including proper protocols for reporting discoveries to authorities if paleontological resources are found, could reduce the impact to these resources.

Livestock Grazing

Under Alternative A, 89% (1,223,820 acres) of land within the Planning Area would be available for grazing, of which 33% (408,932 acres) of grazing lands are classified as PFYC Classes 4 and 5. Areas available for grazing could have increased erosion from surface disturbance through construction of support structures (e.g., stock ponds, dams, roads) or trampling and reduction in vegetation from grazing. Less than 1% (5,229 acres) of land within the Planning Area would be available for trailing only or trailing only/emergency grazing. The remaining land (135,007 acres) within the Planning Area under Alternative A would be unavailable for grazing, of which 15% (21,284 acres) is classified as PFYC Classes 4 and 5.

Visual Resources

Protection of other resources through management decisions, such as VRM, could, as previously noted in Section 3.4.1.2.2, reduce potential impacts to paleontological resources. Of these classes, VRM Class IV areas would have the least indirect protection for known and unknown paleontological resources, and VRM Class I areas would have the most protection. Under Alternative A, 23% (57,379 acres) of PFYC Class 4 and 5 areas are in VRM Class I areas; 40% (100,617 acres) are in VRM Class II areas; 17% (42,900 acres) are in VRM Class III areas; and 20% (50,795 acres) are in VRM Class IV areas. Additionally, Visual Quality Objectives (VQO) areas are only used under Alternative A. The highest percentage of PFYC Classes 4 and 5 are within VQO Modification (i.e., 43%, or 76,298 acres). Under Alternative A, VRM offers the lowest potential for reduced impacts to paleontological resources, because it has the least amount of combined VRM Classes I and II and is the only alternative with VRM Class IV areas and VQO Modification areas.

Fuels and Fire

Under Alternative A, all available methods would be allowed to be used to fight wildfires, including large-scale mechanical methods. Although these may be more effective at limiting the size and severity of fire and thereby reduce impacts to paleontological resources from fire, these methods may include ground disturbance that can damage paleontological resources.

3.4.1.2.4. Impacts under Alternative B

Management of paleontological resources under Alternative B is similar to management under Alternative A, so impacts under Alternative B are also similar to those described above except for the following differences.

Under Alternative B, there would be slightly more emphasis on developing protocols, implementation plans, and management strategies for paleontological resources. Under Alternative B, management would emphasize agency collaboration with the BEC to gather information on the importance of paleontological resources to Tribal Nations, including incorporation of Traditional Indigenous Knowledge and recognition of important traditional uses. Additionally, on-site surveys would be conducted for paleontological resources in areas classified as PFYC Classes 3 and U, in addition to Classes 4 and 5 (in Alternative A) prior to implementation of discretionary actions that may impact paleontological resources. This would provide enhanced protection to an additional 892,681 acres (PFYC Classes 3 and U), and more surveys could allow for a greater understanding of the geology and fossil story in the Planning Area.

Vegetation Management

Under Alternative B, vegetation management would include all available tools, including mechanical methods. The use of heavy mechanical tools can destroy unknown paleontological resources. Alternative B would utilize light-on-the-land treatments in designated wilderness and WSAs, which could help protect paleontological resources from damage in these areas.

Recreation and Visitor Services

Protocols under Alternative B for recreation are similar to those under Alternative A, with the exception that trails could be closed seasonally to allow for resource rest and/or traditional uses, determined in coordination with the BEC and Tribal Nations. Periodic or seasonal closing of trails could result in reduced impacts to paleontological resources by minimizing impact and erosion where such resources are located; however, closure of trails would also result in less access to paleontological resources for inventory, monitoring, and scientific research. Under Alternative B, recreational areas would include four SRMAs and four ERMAs. Approximately 20% (20,983 acres) of the land included in the combined RMAs are in PFYC Classes 4 and 5, representing a smaller area than the comparable PFYC Class 4 and 5 areas identified for Alternative A and indicating a lower likelihood of potential impacts to paleontological resources under Alternative B due to recreation. Alternative B has more acreage than Alternative A designated as ACECs, RNAs, WSRs, and WSAs. These designations would reduce surface disturbances in these areas and provide more protection to paleontological resources than Alternative A.

Alternative B would allow for the addition of new climbing bolts, anchors, or fixed gear in the Indian Creek SRMA with prior approval from the BLM. It also provides for seasonal closures of climbing routes to protect nesting raptors, to provide natural resource rest, and/or to support traditional uses. The addition of new climbing hardware could affect cliff faces and result in degradation of geological resources if such hardware is placed incorrectly. Allowing for seasonal closures or reroutes in climbing areas would provide more protection to unique geological features from the impacts discussed in Section 3.4.1.2.2 than Alternative A.

Under Alternative B, no collection of BENM objects and resources would be allowed, including petrified wood and fossils except where the prohibition is inconsistent with the Religious Freedom Restoration Act or other applicable law. Agencies would collaborate with the BEC to gather information on paleontological resources and their importance to Tribal Nations. Casting of all

paleontological resources would be by permit only. Prohibiting all collection of paleontological resources may reduce impacts from collectors as they extract these resources; however, many people enjoy casual collection and restricting this access could reduce public recreation. Additionally, reducing opportunities for recreational collection could reduce the amount of discovery of novel paleontological resources and reduce scientific study of these resources.

Lands and Realty

Under Alternative B, less than 1% (5,477 acres) of the Planning Area would be open to ROW authorization, and of lands open to ROW authorization, 32% (1,756 acres) are PFYC Classes 4, 5, and U. Of the remaining Planning Area, 66% (905,213 acres) would be avoidance areas, of which 47% (425,413 acres) of avoidance areas are PFYC Classes 4, 5, and U. Additionally, 33% (453,493 acres) would be within ROW exclusion areas, of which 21% (93,256 acres) of exclusion areas are PFYC Classes 4, 5, and U. A total of 1,358,594 acres of the Planning Area would be avoided or excluded within the Planning Area under Alternative B, which equates to 518,669 acres avoided or excluded within PFYC Class 4, 5, and U areas with limited or no surface disturbance or potential disturbance of paleontological resources; this is an increase of exclusion or avoidance of PFYC Classes 4, 5, and U under Alternative B compared to under Alternative A. Potential impacts to paleontological resources from ROW authorizations would be limited or eliminated in these avoided or excluded areas under Alternative B.

Travel and Transportation

Under Alternative B, 276,163 acres (64%) of PFYC Classes 4 and 5 would be managed as OHV limited and 156,191 acres (36%) of PFYC Class 4 and 5 would be managed as OHV closed. The additional acreage of PFYC Class 4 and 5 areas managed as OHV closed compared to Alternative A could help limit new areas of erosion and surface disturbance and reduce impacts to paleontological resources in those areas.

Livestock Grazing

Under Alternative B, 87% (1,194,529 acres) of land within the Planning Area would be available for grazing (29,291 acres fewer than Alternative A), and of these available grazing lands, 33% (404,134 acres) are classified as PFYC Classes 4 and 5 (7%, or 84,793 acres, are classified as PFYC Class U). These areas could have increased erosion from surface disturbance through construction of support structures (e.g., stock ponds, dams, roads) or trampling and reduction in vegetation from grazing; however this reduced acreage would protect these areas from impacts to paleontological resources from grazing, as described in Section 3.4.1.2.2.

Visual Resources

Under Alternative B, 81,068 acres of PFYC Class 4, 5, and U areas are in VRM Class I areas; 244,353 acres are in VRM Class II areas; 7,275 acres are in VRM Class III areas; and no PFYC Class 4, 5, and U areas are in VRM Class IV areas. Under Alternative B, there are 173,521 acres (94%) of overlap with SIO High areas, and 14,038 acres (6%) of SIO Very High areas overlap with PFYC Classes 4, 5, and U. Therefore, under Alternative B, there is less potential for impacts to paleontological resources, because 98% of PFYC Class 4, 5, and U areas are in VRM Class I and II areas, no VQO areas are present, and the largest portion of PFYC Class 4, 5, and U areas are in SIO High and Very High areas.

Fuels and Fire

Under Alternative B, all available methods would be allowed to be used to fight wildfires, including large-scale mechanical methods. Although these may be more effective at limiting the size and severity of fire and thereby reduce impacts to paleontological resources from fire, these methods may include ground disturbance that can damage these resources.

3.4.1.2.5. Impacts under Alternative C

Management of paleontological resources under Alternative C is similar to management under Alternative B; therefore, impacts under Alternative C would be similar to those seen under Alternative B in comparison to Alternative A. Although management under Alternative C includes similar elements as Alternative A, such as the goals, objectives, and management direction, there is more emphasis under Alternative C on developing protocols, implementation plans, and management strategies. Under Alternative C, management would emphasize agency collaboration with the BEC to gather information on the importance of paleontological resources to Tribal Nations, including incorporation of Traditional Indigenous Knowledge and recognition of important traditional uses. Under Alternative C, the authorized collection and casting of fossils would be the same as Alternative B, meaning collection of paleontological resources would be prohibited and casting would be by permit only.

Vegetation Management

Under Alternative C, vegetation management would include all available tools but would exclude chaining. Prohibiting the usage of chaining would reduce the potential for vegetation management to destroy unknown paleontological resources. Additionally, Alternative C would utilize light-on-the-land treatments in more areas than Alternatives A and B, further reducing the potential to damage unknown paleontological resources from vegetation treatments.

Recreation and Visitor Services

Under Alternative C, recreational areas would include four SRMAs and four ERMAs with the same acreage dedicated to each of these zones as under Alternative B. Approximately 15% (97,300 acres) of the RMAs are in PFYC Class 4 and 5 areas, representing a relatively smaller area compared to similar PFYC Class 4 and 5 areas identified for Alternative A and indicating a lower likelihood of potential impacts to paleontological resources under Alternative C due to recreation. Alternative C has more acreage than Alternative A (the same as Alternative B) managed as ACECs, RNAs, WSRs, and WSAs, which would reduce surface disturbance in these areas and reduce impacts to paleontological resources to a greater extent than under Alternative A.

Alternative C requires an Individual Special Recreation Permit (ISRP) for all climbing activity in the Indian Creek SRMA and imposes group size limits, as well as the same seasonal closures as Alternative B. Further, new climbing bolts, anchors, or fixed gear would be painted to limit visual contrast. The addition of new climbing hardware could affect cliff faces and result in degradation of unique geological features if such hardware is placed incorrectly. Compared to Alternative A, these limitations and permits under Alternative C would likely serve to protect the geological features within BENM by reducing the overall number of recreational climbers in the management area and limiting access to climbing areas, thereby reducing the potential for impacts to geological features.

Lands and Realty

Under Alternative C, all of the Planning Area would be either avoidance or exclusion areas for ROW authorizations. Under Alternative C, 59% (811,794 acres) of the Planning Area would be ROW

avoidance areas, of which 48% (393,569 acres) are PFYC Class 4, 5 and U areas, and 40% (552,278 acres) would be within ROW exclusion areas, of which 22% (126,856 acres) are PFYC Classes 4, 5, and U. Designating the Planning Area as either avoidance or exclusion areas would eliminate or greatly reduce potential impacts to paleontological resources from ROW authorizations, especially compared to actions proposed under Alternatives A and B.

Travel and Transportation

Under Alternative C, 253,653 acres (59%) of PFYC Classes 4 and 5 would be managed as OHV limited and 178,700 acres (41%) of PFYC Class 4 and 5 would be managed as OHV closed. The additional acreage of PFYC Class 4 and 5 areas managed as OHV closed compared to Alternative A could help limit new areas of erosion and surface disturbance and reduce impacts to paleontological resources in those areas.

Livestock and Grazing

Under Alternative C, 90% (1,194,529 acres) would be available for grazing (29,291 acres fewer than under Alternative A), with 33% (397,313 acres) of grazing lands classified as PFYC Classes 4 and 5. These areas could have increased erosion from surface disturbance through construction of support structures (e.g., stock ponds, dams, roads) or trampling and reduction in vegetation from grazing; however, this reduced acreage would protect these areas from impacts to paleontological resources from grazing as described in Section 3.4.1.2.2.

Visual Resources

Protection of other resources through management decisions, such as VRM, could, as previously noted in Section 3.4.1.2.2, reduce potential impacts to paleontological resources. Of these classes, VRM Class IV areas would have the least indirect protection for known and unknown paleontological resources and VRM Class I areas would have the most protection.

Fuels and Fire

Fuels and fire management under Alternative C would be very similar to Alternative B but would place more restrictions on the type of techniques that can be used (no chaining would be permitted), allowing for reduced surface disturbance from fire management compared to Alternative A.

3.4.1.2.6. Impacts under Alternative D

Under Alternative D, management of paleontological resources would have slightly more emphasis on developing protocols, implementation plans, and management strategies. Under Alternative D, management would emphasize agency collaboration with the BEC to gather information on the importance of paleontological resources to Tribal Nations, including incorporation of Traditional Indigenous Knowledge and recognition of important traditional uses. Under Alternative D, the authorized collection and casting of fossils would be the same as Alternatives B and C.

Vegetation Management

Under Alternative D, vegetation management would utilize light-on-the-land vegetation treatments wherever practicable, greatly reducing the possibility for damage to paleontological resources from large, heavy machinery utilized in vegetation management actions.

Recreation and Visitor Services

Under Alternative D, in recreational areas where known paleontological resources or sites are present (or known to have high paleontological resources potential), the BLM and USDA Forest Service would take appropriate actions to avoid impacts to such resources, including but not limited to subsequent surveys, avoidance, reroutes, and mitigation. Protocols under Alternative D for recreation are the same as Alternative B, with the exception that no new trails would be allowed to be developed in Shay Canyon, which would result in a decreased potential of impacts to paleontological resources from the development and use of new trails. Approximately 4% (61,184 acres) of the RMAs are in PFYC Class 4 and 5 areas, representing a relatively smaller area compared to similar PFYC Class 4 and 5 areas identified for Alternative A and indicating a lower likelihood of potential impacts to paleontological resources under Alternative D due to recreation. Alternative D has the most acreage of any alternative managed as ACECs, RNAs, WSRs, and WSAs, which would reduce surface disturbance in these areas and would reduce impacts to paleontological resources to a greater extent than Alternative A.

Alternative D incorporates the same goals and objectives as Alternative C for the Indian Creek Corridor.

Lands and Realty

Under Alternative D, all of the Planning Area would be in either avoidance or exclusion areas for ROW authorizations. Under Alternative D, 38% (515,052 acres) of the Planning Area would be ROW avoidance areas, of which 60% (307,130 acres) of ROW avoidance areas are PFYC Class 4, 5, and U areas. By comparison, 56% (849,021 acres) would be within ROW exclusion areas, of which 25% (213,301 acres) are PFYC Classes 4 and 5. Eliminating these high PFYC class areas from areas open to ROW authorization would reduce potential impacts to paleontological resources from ROW authorizations.

Travel and Transportation

Under Alternative D, 223,936 acres (43%) of PFYC Classes 4, 5, and U would be managed as OHV limited and 296,269 acres (57%) of PFYC Class 4 and 5 would be managed as OHV closed. The additional acreage of PFYC Class 4 and 5 areas managed as OHV closed compared to Alternative A could help limit new areas of erosion and surface disturbance and reduce impacts to paleontological resources in those areas.

Livestock Grazing

Under Alternative D, 69% (953,692 acres) would be available for grazing (270,123 acres fewer than Alternative A), with 37% (355,500 acres) of grazing lands classified as PFYC Classes 4 and 5. Paleontological resources in these PFYC Class 4 and 5 areas could be at risk for increased erosion from surface disturbance through construction of support structures (e.g., stock ponds, dams, roads) or trampling and reduction in vegetation from grazing; however, this acreage in PFYC Classes 4 and 5 available for grazing is greatly reduced from Alternative A. This reduction in acreage would help protect these areas from impacts to paleontological resources from grazing, as described in Section 3.4.1.2.2.

Visual Resources

Protection of other resources through management decisions, such as VRM, could, as previously noted in Section 3.4.1.2.2, reduce potential impacts to paleontological resources. Of these classes, VRM Class IV areas would have the least indirect protection for known and unknown

paleontological resources, and VRM Class I areas would have the most protection. Under Alternative D, 199,111 acres of PFYC Class 4, 5, and U areas are in VRM Class I areas; 133,141 acres are in VRM Class II areas; 506 acres are in VRM Class III areas. PFYC Class 4 and 5 areas within each SIO area are the same under Alternative D as under Alternatives B and C, with a reduced potential for impacts compared to actions under Alternative A.

Fuels and Fire

Fuels and fire under Alternative D would require more collaboration with the BEC than under Alternative A. This may include using more traditional indigenous methods for fire suppression and for fuels reduction, as well as an increase in prescribed fire. The increase in prescribed burning could result in damage to paleontological resources from fires, but indigenous burning methods would likely result in less surface disturbance from heavy machinery used during burning and firefighting activities.

3.4.1.2.7. Impacts under Alternative E

Management of paleontological resources under Alternative E is similar to Alternatives B, C, and D with a few key differences: the agencies would collaborate with the BEC to use Traditional Indigenous Knowledge together with Western science in paleontological resource management practices, protocols, studies, and fossil collections. Additionally, on-site surveys of paleontological resources would be conducted for all discretionary actions that have the potential to impact paleontological resources, which would likely require more studies and likely result in expanded knowledge of the paleontological resources in BENM. Other differences include restoration of paleontological resources done in collaboration with the BEC due to the Traditional Ecological Knowledge requiring that paleontological resources be left undisturbed; the BEC notes that any work done involving fossils should not be extractive. Therefore, under Alternative E, collaboration between agencies and the BEC is highlighted to implement appropriate measures, including but not limited to no extraction of fossil resources from BENM; avoidance, restoration, and construction of physical barriers; or other methods to separate the public from paleontological resources. These practices would retain the scientific and cultural integrity of paleontological resources by minimizing or eliminating unnecessary disturbance by discretionary actions. Because avoidance of fossil extraction would result in paleontological resources being exposed to the elements indefinitely, this would result in eventual erosion and may result in vandalism or destruction of paleontological resources. Moreover, physical barriers to separate the public from paleontological resources or areas with the potential for new paleontological resources may result in fewer discoveries due to limited scientific exploration, and possibly reduced public appreciation. Under Alternative E, as with Alternatives B, C, and D, collection of paleontological resources would be prohibited and casting would be by permit only.

Vegetation Management

Under Alternative E, vegetation management would emphasize natural process and Traditional Indigenous Knowledge and would only use mechanical methods for vegetation management when necessary to protect BENM objects. The limited use of machinery would help protect unknown paleontological resources from damage, and the emphasis on natural processes could result in reduced erosion exposing and damaging paleontological resources.

Recreation and Visitor Services

Under Alternative E, landscape-level management zones would be used to manage visitation and other recreation uses in a manner that would protect BENM objects. Nearly 98% of BENM would be

in the Outback Zone and Remote Zone. These areas would provide a natural and self-directed visitor experience and limited development of recreation facilities. This management would use increased permitting and restrictions on group sizes as well as limitations on dispersed camping, and visitors would be encouraged to hike on trails, which would help reduce recreation impacts to paleontological resources throughout the Monument. Alternative E has more acreage than Alternative A managed as ACECs, RNAs, WSRs, and WSAs, which would reduce surface disturbance in these areas and would reduce impacts to paleontological resources to a greater extent than under Alternative A. Additionally, management under Alternative E would not allow any new trails to be developed in Shay Canyon or other areas with significant paleontological resources, reducing impacts to these resources as described in Section 3.4.1.2.2.

Under Alternative E, the addition of climbing bolts, anchors, or fixed gear on new climbing routes would require approval from the agencies, who would work collaboratively with the BEC. This approval process would result in reduced impacts to the unique geological features identified in Proclamation 10285 compared to Alternative A.

Lands and Realty

Under Alternative E, the entire Planning Area would be in either avoidance or exclusion areas for ROW authorizations. Under Alternative E, 19% (259,116 acres) of the Planning Area would be ROW avoidance areas, of which 70% (180,552 acres) are PFYC Class 4, 5, and U areas, and 81% (1,104,956 acres) would be within ROW exclusion areas, of which 31% (339,878 acres) are PFYC Classes 4, 5, and U. Eliminating these high PFYC class areas from areas open to ROW authorization, with a relatively higher percentage of high PFYC classes designated as exclusion areas compared to the other alternatives, would eliminate or greatly reduce potential impacts to paleontological resources from ROW authorizations. This reduced acreage in areas open to ROW authorization would help eliminate or greatly reduce potential impacts to paleontological resources from ROW authorizations.

Travel and Transportation

Under Alternative E, 253,653 acres (59%) of PFYC Classes 4 and 5 would be managed as OHV limited, and 178,700 acres (41%) of PFYC Class 4 and 5 would be managed as OHV closed, the same as Alternative D. The additional acreage of PFYC Class 4 and 5 areas managed as OHV closed compared to Alternative A could help limit new areas of erosion and surface disturbance and would reduce impacts to paleontological resources in those areas.

Livestock Grazing

Under Alternative E, 87% of the Monument (1,194,529 acres) would be available for grazing (29,291 acres fewer than under Alternative A), with 33% (404,134 acres) of grazing lands classified as PFYC Classes 4 and 5 (same as Alternative B). These areas could have increased erosion from surface disturbance through construction of support structures (e.g., stock ponds, dams, roads) or trampling and reduction in vegetation from grazing; however, the additional actions under Alternative E, including prioritization of review and processing of grazing permits and leases; identifying subareas of allotment necessary for closure; reassessment of stocking levels and season of use; and identifying resource thresholds, monitoring, and automatic responses related to land health and/or impacts to cultural and sacred resources could reduce such impacts.

Visual Resources

Protection of other resources through management decisions, such as VRM, could, as previously noted in Section 3.4.1.2.2, reduce potential impacts to paleontological resources. Of these classes,

VRM Class IV areas would have the least indirect protection for known and unknown paleontological resources, and VRM Class I areas would have the most protection. Under Alternative E, all areas would be under VRM Class I or II, which would greatly reduce the potential for impacts compared to actions under Alternative A.

Fuels and Fire

Fire and fuels management under Alternative E is similar to Alternative D. This includes using more traditional indigenous methods for fire suppression and for fuels reduction, as well as an increase in prescribed fire. The increase in prescribed burning could result in damage to paleontological resources from fires, but indigenous burning methods would likely result in less surface disturbance from heavy machinery used during burning and firefighting activities.

3.4.1.2.8. Cumulative Impacts

The cumulative impacts analysis area for paleontological resources is the Planning Area. Ongoing and planned actions in and near BENM would influence the effectiveness of the management of paleontological resources on a regional scale (see Appendix J). The time frame for cumulative environmental consequences for future actions is the life of the RMP/EIS.

The cumulative impacts of past and present management actions on paleontological resources in the Planning Area are captured in the description of the affected environment (Section 3.4.1). Impacts include destruction or loss of paleontological resources and unique geological features through ground disturbance associated with development projects, livestock grazing, and OHV use, as well as recreation use with associated vandalism and unauthorized collection of resources.

Reasonably foreseeable future actions (RFFAs) in BENM have the potential to cumulatively impact paleontological resources or unique geological features through ground disturbance that could directly impact these resources. BLM and USDA Forest Service projects listed in Appendix J that could impact these resources include UDOT San Juan Bridge Repair, ROW UTU-96101 for geotechnical bore holes, Flats Water Wells and Kane Fence, Beef Basin and Dark Canyon Plateau Range Improvements, Mancos Mesa Right-of-Way Access, Hamburger Rock Campground Improvements and Expansion (DOI-BLM-UT-Y020-2021-0017-EA), the Goosenecks Campgrounds and Trails project, temporary access road to state land (UTU-96194), the water tank and associated pipeline for culinary water use, and the Cottonwood Wash bridge replacement project.

Proposed paleontological resource management activities under the action alternatives would contribute to the cumulative effects of regional paleontological management by other agencies and stakeholders. Beneficial direct, indirect, and cumulative impacts on paleontological resources and unique geological features could result from management decisions that restrict surface-disturbing activities, establish areas as special designations, conserve important specimens in publicly accessible museum collections, and inventory sites that facilitate mitigation and avoidance. Conversely, adverse cumulative impacts could result from the incremental loss of paleontological resources, unique geological features, and the associated irretrievable loss of scientific information over time because of ground disturbance, vandalism, and unlawful collection.

3.4.2. Soils and Biological Crusts

3.4.2.1. AFFECTED ENVIRONMENT

3.4.2.1.1. Soil Characteristics

Soils in the Planning Area are derived primarily from sedimentary geological deposits and have developed in residuum, colluvium, alluvium, eolian sands, and loess. Underlying geology, geomorphology, and soil parent material strongly influence soil texture and density of rock fragments. Soils formed in young eolian material range in texture from sandy loam, loamy sand, to sand, whereas soils that derived from shale are clay loam or clay. Deep soils (60 inches or greater) occur within mountainous areas as well as in alluvium, valley fills, and gently sloping mesas or benches. Shallow soils form along exposed rock escarpments, rims, and benches.

Temperatures and precipitation within the Planning Area vary substantially throughout the year and across elevations, which strongly influences soil development and characteristics. For example, soil within lower elevations that are formed along canyon floors, on structural benches, and or salt valleys are generally dry and hot, whereas soils in high-elevation mountain areas are generally cold and moist.

USDA soil taxonomy orders mapped within the Planning Area consist of Alfisols, Aridisols, Entisols, and Mollisols (Appendix A, Figure 3-3, Soil order classification within the Planning Area). Alfisols are generally formed under forest or savanna vegetation and display an accumulation of illuvial clay in the subsurface. Aridisols form under dry climates and contain one or more diagnostic subsurface horizons (e.g., argillic, natric, cambic, calcic/petrocalcic, gypsic/petrogypsic, salic, or duripan). Entisols are young soils that have no diagnostic horizons. Mollisols contain nearly black, organic-rich surface horizons and generally form in relatively high moisture conditions (e.g., mountainous areas of the Planning Area).

In addition to providing vital ecological functions on the Monument, according to the 2022 BEITC LMP, some soils are also used for sand paintings by some Tribes. Soil and minerals from Shash Jáa and gathered by the Navajo are used for sand paintings and dyes, and when these items are gathered, offerings are made in a traditional manner before the items are collected.

Table 3-3 shows the soil map unit and acreage in the Planning Area within BLM-administered lands, which were derived from Soil Survey Geographic Database data. Table 3-4 provides soil map units and acreages within the NFS lands of the Planning Area, which were derived from STATSGO data.

Table 3-3. Soil Map Units on BLM-Administered Lands in the Planning Area

Soil Mapping Unit	Acreage (% of total)
Arches-Rizno-Mido complex	7,964 (1%)
Arches-Sheppard-Rock outcrop complex, 2 to 8 percent slopes	3,726 (<1%)
Badland	4,128 (<1%)
Badland-Rock outcrop complex	2,391 (<1%)
Bankard family-Riverwash complex	4,169 (<1%)
Bankard family-Sheppard complex	128 (<1%)
Barnum loam, 0 to 3 percent slopes	602 (<1%)

Soil Mapping Unit	Acreage (% of total)
Barx fine sandy loam, 3 to 8 percent slopes	2,321 (<1%)
Barx very fine sandy loam, 1 to 4 percent slopes	27,808 (2%)
Begay fine sandy loam, 2 to 6 percent slopes	7,823 (1%)
Begay fine sandy loam, moist, 2 to 6 percent slopes	2,218 (<1%)
Begay-Rizno complex, 3 to 15 percent slopes	10,003 (1%)
Begay-Rock outcrop-Mido complex, 2 to 35 percent slopes	678 (<1%)
Blanding very fine sandy loam, 2 to 10 percent slopes	607 (<1%)
Bluechief fine sandy loam, 1 to 8 percent slopes	377 (<1%)
Bluechief-Limeridge-Nakai complex, 1 to 6 percent slopes	29,609 (2%)
Bodot-Strych-Skos association	6,406 (1%)
Bond-Rizno fine sandy loams, 3 to 15 percent slopes	7,267 (1%)
Bond-Windwhistle complex, 2 to 15 percent slopes	4,320 (<1%)
Bookcliff-Bookcliff, dry, complex	2,972 (<1%)
Bookcliff-Skos-Strych complex	3,989 (<1%)
Cahona fine sandy loam, 2 to 8 percent slopes	129 (<1%)
Cataract loamy fine sand, 2 to 8 percent slopes	1,808 (<1%)
Factory gravelly fine sandy loam, 2 to 6 percent slopes	1 (<1%)
Falcon-Bond-Rock outcrop complex, 15 to 70 percent slopes	1,197 (<1%)
Falcon-Bond-Rock outcrop complex, 2 to 15 percent slopes	4,083 (<1%)
Gilco silt loam, 0 to 1 percent slopes	4 (<1%)
Gilco silty clay loam, 0 to 1 percent slopes	41 (<1%)
Gilco-Trail complex, 0 to 2 percent slopes	133 (<1%)
Gladel-Rock outcrop complex, 5 to 15 percent slopes	10 (<1%)
Green River-Bankard families-Riverwash association, 0 to 4 percent slopes	853 (<1%)
Hoskinnini very gravelly fine sandy loam, 0 to 8 percent slopes	911 (<1%)
Ignacio-Leanto fine sandy loams, 2 to 6 percent slopes	5,204 (<1%)
Ignacio-Leanto fine sandy loams, dry, 2 to 6 percent slopes	1,611 (<1%)
Kiln loam, 2 to 15 percent slopes	2,217 (<1%)
Levante family complex, 0 to 15 percent slopes	1 (<1%)
Limeridge gravelly very fine sandy loam, 4 to 12 percent slopes	9,903 (1%)
Littlenan-Moenkopie-Recapture complex	982 (<1%)
Littlenan-Ruinpoint-Rizno association, 1 to 20 percent slopes	1,634 (<1%)
Mellenthin very rocky fine sandy loam, 4 to 25 percent slopes	317 (<1%)
Metuck very gravelly sandy loam, 25 to 65 percent slopes	1 (<1%)
Mido loamy fine sand, 2 to 8 percent slopes	166 (<1%)
Mido loamy fine sand, dry, 2 to 8 percent slopes	7,122 (1%)
Mido-Riverwash complex	716 (<1%)
Mido-Rock outcrop-Arches complex	2,037 (<1%)
Milok fine sandy loam, 1 to 6 percent slopes	7,603 (1%)
Milok-Mivida complex	25,877 (2%)

Soil Mapping Unit	Acreage (% of total)
Milok-Skos-Strych complex	2,840 (<1%)
Mivida fine sandy loam, 1 to 6 percent slopes	5,313 (<1%)
Mivida fine sandy loam, 2 to 8 percent slopes	2,051 (<1%)
Mivida-Pastern-Rock outcrop complex, 1 to 8 percent slopes	16,327 (1%)
Moab gravelly fine sandy loam, 2 to 8 percent slopes	845 (<1%)
Moab very cobbly fine sandy loam, 3 to 30 percent slopes	2,125 (<1%)
Moenkopie-Moenkopie, warm, complex	26,036 (2%)
Moenkopie-Rock outcrop complex	13,819 (1%)
Moenkopie-Rock outcrop complex, 1 to 15 percent slopes	15,888 (1%)
Moffat fine sandy loam, 0 to 2 percent slopes	261 (<1%)
Moffat loamy fine sand, 2 to 5 percent slopes	655 (<1%)
Myton family-Nakai-Redhouse complex	19,363 (2%)
Myton family-Rock outcrop complex	2,358 (<1%)
Myton family-Shalet-Badland complex	617 (<1%)
Myton family-Skos-Rock outcrop association	63,822 (5%)
Nakai fine sand, 2 to 8 percent slopes	3,064 (<1%)
Nakai fine sandy loam, 1 to 6 percent slopes	4,219 (<1%)
Nakai-Moffat-Sheppard association	11,655 (1%)
Nepalto gravelly sandy loam, 2 to 8 percent slopes	1,487 (<1%)
Newsrock loamy fine sand, 1 to 3 percent slopes	356 (<1%)
Nomrah-Plumasano-Gladel complex, 2 to 8 percent slopes	1 (<1%)
Oljeto family, 10 to 40 percent slopes	133 (<1%)
Pastern-Rizno-Rock outcrop complex	12,721 (1%)
Piute-Sheppard-Rock outcrop association	11,267 (1%)
Plumasano-Tanoan family-Gladel complex, 2 to 50 percent slopes	4 (<1%)
Recapture fine sandy loam, 0 to 2 percent slopes	1 (<1%)
Recapture-Redbank family-Bankard family association, 0 to 8 percent slopes	2,305 (<1%)
Redbank family-Riverwash-Green River family association, 0 to 4 percent slopes	4,532 (<1%)
Redbank fine sandy loam, dry, 0 to 3 percent slopes	4,694 (<1%)
Redbank fine sandy loam, dry, 3 to 8 percent slopes	3,409 (<1%)
Redbank very fine sandy loam, alkali, 0 to 3 percent slopes	90 (<1%)
Redhouse fine sandy loam, 2 to 8 percent slopes	2,601 (<1%)
Rizno, dry-Rock outcrop complex, 3 to 15 percent slopes	15,008 (1%)
Rizno-Barx-Yarts complex	137,698 (11%)
Rizno-Cahona-Rock outcrop complex	1,656 (<1%)
Rizno-Littlenan-Bodot association	11,888 (1%)
Rizno-Mido complex	249 (<1%)
Rizno-Rock outcrop complex	74,851 (6%)
Rizno-Rock outcrop complex, 3 to 15 percent slopes	37,764 (3%)
Rizno-Ruinpoint-Rock outcrop complex	9,443 (1%)

Soil Mapping Unit	Acreage (% of total)
Rizno-Skos-Rock outcrop complex	78,272 (7%)
Rizno-Strych association	3,936 (<1%)
Robroost family-Gypsum land complex	7,307 (1%)
Rock outcrop	38,171 (3%)
Rock outcrop-Moenkopie complex, 3 to 15 percent slopes	28,404 (2%)
Rock outcrop-Nizhoni-Bamac complex, 5 to 60 percent slopes	6 (<1%)
Rock outcrop-Piute-Sheppard complex	4,527 (<1%)
Rock outcrop-Piute-Skos association	32,459 (3%)
Rock outcrop-Rizno complex, 3 to 15 percent slopes	48,191 (4%)
Rock outcrop-Rizno, dry complex, 3 to 15 percent slopes	45,695 (4%)
Rock outcrop-Strych-Rizno association	40,973 (3%)
Rock outcrop-Ustic Torripsamments complex, 2 to 15 percent slopes	22 (<1%)
Rubble land-Rock outcrop complex	11,136 (1%)
Ruinpoint-Cahona association	140 (<1%)
Sandstone rockland, steep	1,070 (<1%)
Shalako-Anasazi-Rock outcrop complex, 3 to 15 percent slopes	24 (<1%)
Sheppard fine sand, 2 to 8 percent slopes	2,679 (<1%)
Skos channery fine sandy loam, 4 to 30 percent slopes	4,025 (<1%)
Skos, warm-Rock outcrop complex	20,570 (2%)
Strych, warm-Skos, warm-Badland complex	15,283 (1%)
Strych-Rizno-Strych, very steep association	22,570 (2%)
Strych-Skos-Badland complex	264 (<1%)
Thoroughfare fine sandy loam, 2 to 8 percent slopes	6,237 (1%)
Trail fine sand, 0 to 5 percent slopes	967 (<1%)
Trail fine sandy loam, 0 to 1 percent slopes	19 (<1%)
Ustic Torrifluvents-Ustic Torrifluvents, sodic-Typic Ustifluvents complex, 0 to 6 percent slopes	3,506 (<1%)
Ustic Torriorthents-Lithic Torriorthents, warm-Rock outcrop complex, 10 to 80 percent slopes	54,237 (5%)
Waas very fine sandy loam, 2 to 8 percent slopes	313 (<1%)
Water	430 (<1%)
Windwhistle very fine sandy loam, 1 to 6 percent slopes	142 (<1%)
Windwhistle-Sazi very fine sandy loams, 1 to 3 percent slopes	247 (<1%)
Yarts fine sandy loam, 5 to 30 percent slopes	1,412 (<1%)
Total	1,200,717

Table 3-4. Soil Map Units by Acreage within National Forest System Lands in the Planning Area

Soil Mapping Unit	Acreage (% of total)
Hagerman-Cahona-Begay (s7958)	229 (<1%)
Namon family-Flygare family-Dranyon-Broad Canyon family (s8002)	6,432 (2%)
Rock outcrop-Rizno (s7959)	6,571 (2%)

Soil Mapping Unit	Acreage (% of total)
Strych-Rizno (s7948)	24,312 (8%)
Strych-Rock outcrop-Rizno-Montvale-Monticello (s7940)	46,590 (16%)
Strych-Skos-Bookcliff (s7943)	72,351 (25%)
Tolman family-Harpole-Falcon family-Cabin-Bookcliff (s8001)	79,122 (27%)
Tomasaki-Sessions-Richens-Harpole-Broad Canyon family (s8003)	37,660 (13%)
Ustic Torriorthents-Rock outcrop-Lithic Torriorthents (s7954)	13,212 (5%)
Waas-Tomasaki-Herm-Falcon (s7961)	2,805 (1%)
Total	289,284

The USGS has recorded at least seven multiyear droughts in Utah since 1896 (USGS 2003), and droughts are becoming increasingly common and more severe than in the past (Littell et al. 2016; Seager et al. 2007). Trends in the soil water balance over time have shown a greater water deficit within the soil of topographically diverse environments (escarpments and mesa lands), which are generally associated with pinyon-juniper and/or shrubland vegetation (D’Amore and Kane 2016).

Disturbance to soils associated with recreation include trails, OHV use, campgrounds, dispersed camping, events, staging areas, and recreational facilities. Disturbance to soils from livestock grazing activities include water developments, range improvements, and cattle movement. See Section 3.4.6 for a discussion of current uses and impacts. The impacts to soils resulting from these disturbances include increased compaction, decreased infiltration rates, increased erosion rates, and reduced nutrient cycling.

3.4.2.1.2. Site Degradation Susceptibility

The Natural Resources Conservation Service (NRCS) provides ratings for soil susceptibility to degradation from disturbance (Site Degradation Susceptibility Rating [SDSR]), which is defined as a soil’s relative resistance to degradation (NRCS 2022). A soil’s relative resistance or resilience to change from disturbance varies as a function of soil type, vegetation cover and structure, climate, land use, and disturbance regime but also varies across differing temporal and spatial scales. The SDSR considers several factors, including soil’s susceptibility to wind and water erosion, salinization, sodification, soil fertility depletion or redistribution, and loss of adequate rooting depth for vegetation (NRCS 2022).

For planning purposes, the agencies have applied categorical ratings to the Decision Area to inform management. These categories reflect a soil’s limitations or constraints and relative susceptibility to degradation from disturbance (NRCS 2022). A “highly susceptible” rating indicates a soil has one or more features that make the soil very vulnerable to degradation. “Moderately susceptible” rating indicates a soil has features with moderate vulnerability to impacts from disturbance. A “slightly susceptible” rating indicates a soil has features with low vulnerability to degradation. A summary of acreage for these categories is provided in Table 3-5. The majority of the Decision Area mapped for SDSR falls within the “highly susceptible” category (30%) and “moderately susceptible” category (39%).

Table 3-5. Site Degradation Susceptibility Rating Categories

Site Degradation Susceptibility Rating Category	Acres*	Percentage of Mapped Areas in BENM
Highly susceptible	442,418	30%

Site Degradation Susceptibility Rating Category	Acres*	Percentage of Mapped Areas in BENM
Moderately susceptible	584,668	39%
Not rated	443,673	30%
Slightly susceptible	19,646	1%
Total	1,490,404	100%

Source: NRCS (2022).

* Not all areas within the Decision Area have been mapped for soil degradation categories.

3.4.2.1.3. Sensitive Soils

A number of sensitive soils occur or have potential to occur within the Planning Area, including previously degraded soils and soils which are susceptible to erosion. These sensitive soils have physical and or chemical characteristics that make them susceptible to disturbance and challenging to restore or reclaim. Sensitivity classes that could occur within the Planning Area are droughty (marked by little or no precipitation or humidity), shallow, hydric (soils permanently or seasonally saturated by water), high risk of wind or water erodibility, low erosion tolerance, shallow, acidic, gypsiferous (soils containing sufficient quantities of gypsum to interfere with plant growth), desert pavement, saline, and high calcium carbonate (calcareous) (NRCS 2023).

3.4.2.1.4. Biological Soil Crusts

Many of the biotic communities found in the Planning Area have evolved with the presence of BSCs. BSCs include mats or filaments of cyanobacteria, lichens, and mosses. These crusts play a major role in reducing water and wind erosion and preventing the establishment of invasive annual grasses (Belnap et al. 2001). Late succession crusts (dominated by mosses and lichen) commonly appear dark, rough, and pinnacled, where a combination of frost heaving and dust capture increase surface microtopography. Early succession crusts appear as a smoother, two-dimensional layer on the surface and are dominated by cyanobacteria (Belnap et al. 2001).

The presence of biological crusts in arid and semiarid lands significantly impact soil function by reducing soil erosion by both wind and water, fixing atmospheric nitrogen, retaining soil moisture, and providing a living organic surface mulch. They can be used as an indicator of rangelands' ecological health. Development of biological crusts is strongly influenced by soil texture, soil chemistry, and successional colonization by crustal organisms. The type and abundance of biological crusts can be used by the land manager to determine the condition of a site and can help managers understand if recent disturbances have occurred (Belnap et al. 2001).

Severity, size, frequency, and timing influence the impact of disturbances on biological crusts. Greater impacts and slower recovery result when the disturbance kills or removes the crustal organisms. Hot ground fires often kill crustal organisms, which results in slower recovery of the surface crust. Fine-textured soils have faster crust recovery rates than coarse-textured soils (Belnap et al. 2001).

Managing for healthy biological crusts requires that impacts occur when the crusts are less susceptible to damage and when conditions are best for recovery. Soil crust components are brittle when dry and their connections are easily crushed. So, impacts from compression disturbance (such as those from vehicles or trampling), while always detrimental to soil crusts, can be more destructive when soils are dry. Failure to properly manage soils after a disturbance can allow irreversible invasion by annual grasses (e.g., cheatgrass) and other invasive plants such as Russian thistle (*Salsola tragus*) as well as erosion. Human impacts can be harder to control because people prefer to walk and drive in open areas that depend on BSCs for stability (Belnap et al. 2001).

The soil surveys do not contain information on the amounts or types of BSCs that may occur in each soil map unit. No survey or inventory data have been collected specific to BSCs within the Planning Area and these data are not required for the BENM planning effort; however, agencies do and will continue to collect BSC frequency and cover data as part of the system of long-term range trend studies that occur across the Planning Area, data that are considered in implementation-level decision-making.

3.4.2.1.5. Assessment, Inventory, and Monitoring Data Trends

High soil susceptibility to degradation, decreased soil stability, and reduced litter cover increase the risk of soil erosion by water within drainage basins, and directly impacts water quality. To inform current landscape and soils health within BENM, terrestrial AIM data points (Appendix A, Figure 3-16, Terrestrial and lotic AIM data points within BENM administrative boundaries) were overlaid with the 12 HUC 10 watersheds (Appendix A, Figure 3-27, Hydrologic unit code 10 watersheds within the Planning Area) intersecting BENM (BLM and USDA Forest Service GIS 2022). A description of watersheds encompassed within BENM, including the acreage and percentage in the Planning Area, is presented in Appendix I, Table I-1. Watersheds with high departure from expected LANDFIRE biophysical setting (BPS) soil conditions are presented in Appendix A, Figure 3-4, Spatial distribution of departures from expected soil conditions generated using inverse distance weighted interpolation of terrestrial AIM points. See Appendix K for more information on AIM data.

Prior to assessing the overall land health at each terrestrial AIM plot, benchmarks were needed for each of the three soil indicators. Benchmarks are indicator values or ranges of values which, when exceeded, indicate departure from desired conditions. Applying benchmarks that describe expected/desired conditions and relate to management goals can aid in the interpretation of data. Benchmark values were established using distributions of indicator values from terrestrial AIM data points sampled within the two level IV ecoregions present within the Monument. Ecoregions are areas that are grouped based on similarity in geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The EPA sorts ecoregions using a hierarchical scheme in which Level I is the coarsest level and Level IV is the most detailed (Omerick 1995). From this pool of sampled points, points within the Monument were excluded and grouped by LANDFIRE BPS group; benchmarks were then set at either the 2⁵th (litter cover and soil stability) or 7⁵th percentile (bare soil) within the respective BPS group of the AIM plot in question. (For example, an AIM plot sampled in Colorado Plateau Pinyon-Juniper Shrubland would be compared against all terrestrial AIM plots in that BPS group.) Indicator values that were below the 2⁵th or above the 7⁵th percentile threshold (depending on the indicator) were deemed to be not meeting expected soil conditions.

The AIM plots were subsequently aggregated by HUC 10 watershed, and watershed indicators were considered to meet expected BPS soil conditions if less than 75% of AIM observations per parameter in each watershed were outside the expected range (e.g., 75% of bare soil observations per HUC 10 watershed would need to meet expected ecological condition). Further detail can be found in BLM Technical Note 455 and Appendix A. The summary of each HUC 10 watershed is presented in Table 3-6.

Appendix A, Figure 3-5, Change in BENM bare ground cover from the Rangeland Analysis Platform from 1997 to 2021, and Figure 3-6, Change in BENM litter cover from the Rangeland Analysis Platform from 1997 to 2021, provide an overview of current soil health parameters within the Planning Area, including bare soil cover change and litter cover change within BENM. The proportion of bare soil cover observations meeting expected BPS conditions ranged from 35.7% to 100% (Table 3-7). Areas of decreased bare soil cover (based on trends from 1996 to 2021) are concentrated within the northeastern portion of the Planning Area, while areas of increased bare soil cover are scattered across the Planning Area, with small areas of concentrated increase in bare

soil cover within the southern portion of BENM (see Appendix A, Figure 3-5, Change in BENM bare ground cover from the Rangeland Analysis Platform from 1997 to 2021). The proportion of total litter cover observations meeting expected BPS conditions ranged from 21.4% to 100% (Table 3-8). Litter cover change (based on trends from 1996 to 2021) shows areas of concentrated increased litter cover within the same area that showed increased bare soil cover, with scattered areas of decreased litter cover throughout the Planning Area (see Appendix A, Figure 3-6, Change in BENM litter cover from the Rangeland Analysis Platform from 1997 to 2021). The proportion of soil stability observations meeting expected BPS conditions ranged from 50% to 100% (Table 3-9). Table 3-10 describes statistics for any hit for cyanobacteria, lichen, and moss at BLM AIM plots within BENM and aggregated by HUC 10 watersheds. Comb Wash, Grand Gulch, Harts Draw, and Lime Creek – San Juan River have the highest median and mean of hits, indicating higher cover of BSC in those watersheds. Patterns of bare soil cover, litter cover change, and soil stability indicate that certain areas may be more vulnerable to disturbance and may need additional protection measures to minimize impacts to vulnerable soils.

Table 3-6. Watershed Summary of the Proportion of Terrestrial Assessment, Inventory, and Monitoring Data Points within Each Hydrologic Unit Code 10 Watershed Meeting Expected Respective LANDFIRE Biophysical Setting Soil Conditions for the Semiarid Benchlands/Canyonlands and Arid Canyonlands Ecoregion (L4 20c and 20d, respectively)

HUC 10	AIM Plots (n)	Proportion of Observations Meeting Expected LANDFIRE BPS Condition (%)		
		Bare Soil Cover	Total Litter Cover	Soil Stability
Cataract Canyon-Colorado River	5	60.0	40.0	100.0
Comb Wash-San Juan River	23	73.9	69.6	82.6
Copper Canyon-San Juan River	6	66.7	33.3	50.0
Cottonwood Wash	10	80.0	60.0	70.0
Dark Canyon	13	92.3	84.6	84.6
Grand Gulch	19	63.2	36.8	94.7
Gypsum Canyon	3	66.7	100.0	66.7
Harts Draw	6	83.3	66.7	100.0
Indian Creek	14	35.7	21.4	57.1
Lime Creek-San Juan River	19	63.2	68.4	89.5
Lockhart Canyon-Colorado River	2	100.0	50.0	50.0
White Canyon	19	63.2	47.4	63.2

Table 3-7. Bare Soil Cover Descriptive Statistics Measured at BLM Assessment, Inventory, and Monitoring Plots within the 12 Hydrologic Unit Code 10 Watersheds of the BLM Portion of Bears Ears National Monument

HUC 10	AIM Plots (n)	Minimum	1st Quartile	Median	Mean	3rd Quartile	Maximum
Cataract Canyon-Colorado River	5	10.7	22.7	25.3	31.1	42.7	54.0
Comb Wash-San Juan River	23	0.0	2.0	3.3	14.2	27.7	46.0
Copper Canyon-San Juan River	6	3.3	15.4	30.9	32.1	52.3	57.4
Cottonwood Wash	10	4.0	16.8	21.7	23.9	33.4	40.7

HUC 10	AIM Plots (n)	Minimum	1st Quartile	Median	Mean	3rd Quartile	Maximum
Dark Canyon	13	0.0	4.0	4.7	11.9	20.7	30.0
Grand Gulch	19	0.0	3.5	12.0	22.4	36.3	84.2
Gypsum Canyon	3	2.7	4.7	6.7	16.0	22.7	38.7
Harts Draw	6	0.7	4.7	23.2	19.7	30.4	39.6
Indian Creek	14	0.0	11.7	47.7	38.6	63.8	67.3
Lime Creek-San Juan River	19	0.0	8.0	16.0	21.0	34.5	48.5
Lockhart Canyon-Colorado River	2	18.0	24.5	31.0	31.0	37.5	44.0
White Canyon	19	0.7	7.3	21.8	26.9	44.6	70.3

Table 3-8. All Hit Litter (Herbaceous and Woody) Cover Descriptive Statistics Measured at Assessment, Inventory, and Monitoring Plots within the 12 Hydrologic Unit Code 10 Watersheds of the BLM Portion of Bears Ears National Monument

HUC 10	AIM Plots (n)	Minimum	1st Quartile	Median	Mean	3rd Quartile	Maximum
Cataract Canyon-Colorado River	5	23.3	34.7	35.3	44.4	61.3	67.3
Comb Wash-San Juan River	23	2.7	26.0	34.0	42.5	65.0	80.7
Copper Canyon-San Juan River	6	1.0	3.5	9.4	10.9	18.7	22.0
Cottonwood Wash	10	0.0	21.0	31.3	27.5	36.8	44.6
Dark Canyon	13	22.7	42.0	52.7	58.7	73.3	95.3
Grand Gulch	19	2.7	11.3	26.0	23.8	31.3	64.0
Gypsum Canyon	3	45.3	50.7	56.0	59.6	66.7	77.3
Harts Draw	6	7.9	25.7	39.7	35.5	46.2	56.7
Indian Creek	14	2.0	9.1	20.3	22.0	31.2	49.3
Lime Creek-San Juan River	19	11.9	25.2	34.7	33.9	43.4	54.7
Lockhart Canyon-Colorado River	2	14.0	18.0	22.0	22.0	26.0	30.0
White Canyon	19	3.0	16.6	29.3	34.2	51.9	74.0

Table 3-9. Soil Stability Descriptive Statistics Measured at Assessment, Inventory, and Monitoring Plots within the 12 Hydrologic Unit Code 10 Watersheds of the BLM Portion of Bears Ears National Monument

HUC 10	AIM Plots (n)	Minimum	1st Quartile	Median	Mean	3rd Quartile	Maximum
Cataract Canyon-Colorado River	5	3.1	3.7	3.8	3.9	4.2	4.8
Comb Wash-San Juan River	23	1.6	3.4	4.4	4.3	5.4	6.0
Copper Canyon-San Juan River	6	1.3	1.5	2.2	2.5	3.0	4.7
Cottonwood Wash	10	0.9	2.4	3.5	3.2	4.1	4.8
Dark Canyon	13	1.5	3.5	4.2	3.9	4.5	6.0
Grand Gulch	19	1.9	3.3	4.2	4.2	5.3	6.0
Gypsum Canyon	3	2.2	2.6	3.0	3.3	3.8	4.6
Harts Draw	6	2.6	3.4	4.6	4.4	5.7	5.8

HUC 10	AIM Plots (n)	Minimum	1st Quartile	Median	Mean	3rd Quartile	Maximum
Indian Creek	14	1.0	2.0	2.7	2.9	3.2	6.0
Lime Creek-San Juan River	19	2.4	3.0	4.1	4.0	4.8	5.9
Lockhart Canyon-Colorado River	2	2.0	2.5	3.1	3.1	3.6	4.1
White Canyon	19	0.9	2.1	3.8	3.4	4.6	6.0

Table 3-10. Any Hit of Cyanobacteria, Lichen, and Moss Cover Descriptive Statistics Measured at BLM Assessment, Inventory, and Monitoring Plots within the 12 Hydrologic Unit Code 10 Watersheds of the BLM Portion of Bears Ears National Monument

HUC 10	AIM Plots (n)	Minimum	1st Quartile	Median	Mean	3rd Quartile	Maximum
Cataract Canyon-Colorado River	5	1.3	2.7	3.3	6.7	7.3	18.7
Comb Wash – San Juan River	23	0.0	14.7	30.7	36.9	59.7	87.3
Copper Canyon – San Juan River	6	0.0	0.0	0.3	5.8	6.2	26.0
Cottonwood Wash	10	0.7	3.2	9.1	19.5	29.2	75.3
Dark Canyon	13	0.0	0.0	1.3	14.9	20.0	66.7
Grand Gulch	19	1.0	5.3	18.7	31.0	57.0	82.7
Gypsum Canyon	3	0.0	2.3	4.7	6.7	10.0	15.3
Harts Draw	6	0.0	5.5	14.7	31.5	63.3	78.0
Indian Creek	14	0.0	0.0	0.0	18.8	20.5	95.3
Lime Creek – San Juan River	19	0.7	17.0	28.7	34.7	54.3	74.7
Lockhart Canyon – Colorado River	2	0.0	2.5	5.0	5.0	7.5	10.0
White Canyon	19	0.0	0.5	2.0	13.1	19.0	75.3

3.4.2.2. ENVIRONMENTAL CONSEQUENCES

3.4.2.2.1. Issues

- How would existing and proposed land use allocations affect the structure, health, and function of soil resources (including BSCs and other sensitive soils) across the landscape?
- How would BENM management actions impact soils (e.g., degradation, erosion, preservation, etc.), including BSCs and other sensitive soils?

3.4.2.2.2. Impacts Common to All Alternatives

Several management actions are anticipated to have impacts on soil resources, which are discussed below. Actions that could impact soil resources include ground-disturbing activities associated with ROWs granted; recreation, including camping, hiking, and OHV use; special land use designations; livestock grazing; and vegetation and forest management.

Land management actions and associated activities (e.g., ROW development and special land use designations, recreation management, livestock grazing, and vegetation and forest management), would directly and indirectly impact soil resources within the Decision Area. Ground-disturbing and vegetation removal activities would increase the potential for loss or impairment of soil structure

and function and the susceptibility of soils to wind and water erosion. Associated impacts could include soil compaction, loss or displacement of topsoil or protective soil surface features (e.g., BSCs), mixing of soil horizons, decreased soil stability, increased mass wasting potential, nutrient cycling and ratio impacts, and interference with natural hydrologic properties (e.g., infiltration, runoff, and gas exchange). The loss of natural soil structure and function can create a feedback loop that further compounds losses of native vegetation cover, topsoil, and soil productivity through time.

Impacts from ground-disturbing activities on soil resources can be mitigated through applicable stipulations or measures that address site-specific environmental concerns. Restorative activities conducted in disturbed areas, including reclamation or restoration of natural soil surface or subsurface features, vegetation and forest communities, and geomorphology, have the potential to improve soil ecological function and prevent further soil loss or degradation.

Sensitive soils are generally more susceptible to ground-disturbing activities with amplified impacts from surface disturbance. BSCs are fragile and extremely susceptible to physical disruption from foot traffic, grazing, OHVs, and mechanized equipment, which destabilize surface soils. BSCs remain challenging to restore (Bowker 2007). All alternatives would seek to protect highly sensitive soils (i.e., soils highly susceptible to erosion) and BSCs.

All alternatives would seek to promote sustainable soil functions and interactions with all other resources on the Monument and maintain or improve soils to a suitable level of functionality, with soil properties appropriate to site-specific climate and landform, and to the total functional composition of soils on the Monument. These efforts would include agency collaboration with the BEC to reduce erosion, identifying areas with BSCs, and/or seasonal or permanent closures to protect soil crusts. In addition, the alternatives would seek to protect all other resources that depend on the soils as part of the healing landscape of the Monument.

Climate change is expected to impact the health and function of soil resources, including BSCs and other sensitive soil types under all alternatives. Climate trends for the area are discussed in Section 3.5.10. Briefly, predictions for southeastern Utah indicate a warmer and drier climate with less precipitation and more common and more severe droughts and wildfires. Climate change is expected to create an amplified hydrological cycle, with extreme cycles of drought and heavy precipitation that will impact soil water availability, soil productivity, vegetation communities, fire regimes, and wind and water erosion. Finer soil textures are expected to buffer changes in climate more readily than coarse soil textures, and those areas with finer soil textures will experience change more slowly.

BSCs, especially late-successional crusts, perform many important ecosystem functions such as regulating infiltration, nutrient cycling, soil stabilization, and carbon sequestration that have important implications for climate change resiliency (de Guevara and Maestre 2022). Recent studies have shown that increased warming can cause a reduction in soil crust cover and diversity (de Guevara et al. 2018; Ferrenberg et al. 2015) while changes in the timing of precipitation can have even more dramatic and immediate effects (Reed et al. 2012). Another recent study showed that climate change has similar effects on biocrust communities as physical disturbance (Ferrenberg et al. 2015). Wildfires similarly have detrimental effects on BSC diversity and cover (Palmer et al. 2020), and, as wildfires increase in frequency and severity, these impacts will be magnified throughout the biological soil communities.

Each management action taken at BENM would likely have minimal individual contributions to climate change, and calculating exactly how each management alternative would contribute to climate change is impossible; however, alternatives that manage for minimized soil disturbance

and emphasize rehabilitation and protection of soil crusts would likely have more resilient and higher functioning BSC communities that are better able to weather changes in climate.

The impacts of management activities on soil resources vary based on the nature and magnitude of ground disturbance or restorative action and the legacy impacts from previous land use. The following sections summarize the expected impacts of foreseeable management actions and associated activities.

Lands and Realty

Generally, for land allocations the greater the size of the area and/or the more ground-disturbing activities that are authorized, the greater the potential impact on soil resources from activities such as vegetation removal, soil excavation, and construction of facilities. These activities also could cause soil erosion, disturbance of natural soil surface features, and the loss of soil productivity. Areas that remain or become ROW exclusion areas would be subject to the fewest potential ground-disturbing activities that would impact soil resources. Areas that remain or become ROW avoidance areas would have greater potential for future soil resource impacts resulting from ground disturbance than exclusion areas. Areas that remain or become open to ROW authorization have the greatest potential for ground-disturbing activities that could impact soil resources. Ground-disturbing activities would be expected to have a greater level of impact to sensitive soils and BSCs than to non-sensitive soil types and within areas identified as having a moderate or high soils degradation susceptibility rating or lower soil aggregate stability.

Recreation and Visitor Services

BENM would provide various types of recreation throughout the Monument under all alternatives. Recreation can cause localized impacts on soil resources and indirect impacts across the landscape. Hiking, mountain biking, dispersed camping, overlanding (a blend of car camping and OHV type use), and OHV use causes soil compaction, vegetation trampling, habitat fragmentation, increased weed invasion, and increased soil erosion (Switalski 2018). As hiking and camping (including dispersed camping and overlanding) become more popular, trail and campsite widening can occur, magnifying erosion and increasing the area depth of soil disturbance. In BENM, mechanized non-motorized use (e.g., biking) is limited to designated trails, which could limit impacts to sensitive soils from that use. Generally, hiking and mountain bike trail use are localized with impacts on soil resources limited to trailside areas. Informal user trails, side-country networks, and dispersed human recreation can occur, causing increased impacts on soil resources. In BENM, mechanized non-motorized use (i.e., biking) is limited to designated trails, which could limit impacts to sensitive soils from that use.

Similar to camping and bikepacking, the use of OHVs on public lands can expand beyond authorized and managed zones and result in increased soil resource impacts. Without adherence to existing and established routes, OHV use also can lead to greater vegetation and soil disturbance than hiking and bikepacking, owing to OHV weight and travel speed. Dispersed camping and overlanding have a higher likelihood of impacting soil resources due to uninformed travel outside designated camping areas and beyond established OHV routes.

OHVs can damage soils causing ruts, soil compaction, increased erosion, increased frequency of dust storms, and sedimentation of waterways. Three types of travel management designations have been defined, with variable levels of potential soil disturbance. Areas that are designated as OHV closed would have no OHV-related soil impacts. Areas where OHV travel is limited to designated routes would have some soil impacts, but those impacts would be limited to designated

routes where disturbance has occurred previously. There are no areas in the Monument designated as OHV open under any alternative.

Special designation areas, including wilderness areas, WSAs, and ACECs, would generally have protective impacts on soil resources compared with areas that lack special designation. ACECs would be managed according to their special management (see Section 3.4.9) but would generally have some restrictions on ground-disturbing activities that would destabilize soils or decrease soil productivity.

Livestock Grazing

Grazing is permitted by permit holders under all alternatives. Proclamation 10285 requires retiring additional acres from livestock grazing if permit holders voluntarily relinquish their leases or permits. Additional acreage being made unavailable for grazing through such retirements would provide more protection for soil resources.

Livestock grazing has the potential to cause impacts on soil resources, with the level of impacts dependent on the intensity and duration of grazing, range site potential, local climate and weather conditions, and seasonal timing of use. Depending on site conditions and methods, improper grazing can cause vegetation loss, loss of BSC, increased nutrient loading, soil compaction, and destruction of soil structure, which can subsequently cause erosion. Studies have shown that trampling disturbance of soils and BSCs is common in areas of livestock grazing and that BSCs are highly sensitive to trampling disturbance (Rodriguez-Caballero et al. 2018). Trampling disturbance can destroy the structure of BSCs and reduce their important ecological functions such as carbon storage and exchange, water infiltration, and nutrient cycling and can lead to an overall decrease in BSC cover (Bowker et al. 2013; Wang et al. 2009). Construction of rangeland improvements would cause ground disturbance and potential compaction or displacement of soils, however, range improvements can also have an overall benefit to soil resources when they improve the distribution pattern of livestock grazing across a pasture or allotment (Holecheck et al. 2001), particularly if they result in livestock avoiding areas with sensitive soil types. Sensitive soil types, such as BSCs, would generally be more susceptible to physical impacts from livestock trampling or rangeland improvement construction activities than non-sensitive soil types.

All alternatives include management direction to mitigate the impacts of grazing and to emphasize sustainable, healthy rangelands. Management direction would emphasize meeting BLM standards in a manner that is consistent with the protection of BENM objects, including sensitive soils and BSCs.

Vegetation Management

Desired future conditions for vegetation and forest management emphasize establishment, restoration, and maintenance of sustainable and healthy ecosystems. Restoration activities to move vegetation toward desired conditions would generally support long-term protection of soils from erosion and restoration of soil structure, function, and productivity. Vegetation management activities that cause ground disturbance or remove or change vegetation structure could cause short-term impacts on soil, leading to a temporary increase in the soil erosion potential, compaction, or changes to soil structure. For example, invasive or noxious plant treatment and prescribed burns would limit proliferation of treated vegetation; a short-term decrease in vegetation cover could temporarily destabilize soils and increase potential erodibility of soils. If heavy equipment is required for treatments (e.g., tractors for reseeding or masticators for reducing vegetation size), this equipment can further disrupt ground cover and compact or disturb soil surfaces (Miller et al. 2004).

Timber and wood product harvest can impact soils due to the use of heavy machinery that can cause soil compaction and remove or mix soil organic matter, which can reduce nutrient cycling and water infiltration capabilities. Wood collection can remove beneficial vegetation and litter cover potentially causing increased erosion; however, it may also help reduce fuel loads, reducing the risk of uncharacteristic wildfire, the adverse effects of which are discussed below.

Although these short-term impacts could last up to 5 years, soils would be expected to stabilize as native or desired vegetation structure is established and natural soil protection (such as vegetation debris built up along soil surfaces) accumulates. As new vegetation becomes established, soils would be expected to stabilize and provide for further establishment and growth of native vegetation. Impacts on sensitive soils would likely be amplified depending on the nature of vegetation management activities. For example, some biotic soil organisms are sensitive to herbicide application (von Reis and Clarke 2015) and very sensitive to any ground disturbance (Belnap et al. 2006); they also can be damaged by fire (Johansen 2003).

Wildland fires cause complex impacts on soil resources that involve nutrient cycling dynamics, changes to water infiltration and runoff, and erosion susceptibility (Martin and Moody 2001; Moody et al. 2008; Moody and Martin 2009). Fire impacts vary depending on site-specific conditions, including vegetation fire condition class, vegetation community adaptations to fire, burn severity, and preburn soil conditions. Loss of vegetation cover and structure from high-severity burns dramatically decreases soil cover, exposing soils to wind and water erosion, destabilizing soils, and increasing mass wasting susceptibility. Fires also cause changes to soil chemistry and structure, which impact soil productivity and hydrologic function, including development of temporary hydrophobicity and impeded infiltration (Woods et al. 2007).

Fire prescriptions, fuels management, and fire suppression can minimize or mitigate some of these soil resource impacts from high-intensity fires (by reducing the potential for severe fires); however, these activities can cause some short-term impacts on soils, such as soil compaction or displacement from surface-disturbing fire suppression tactics or fuels treatments and altered soil chemistry from chemical retardants. BMPs would mitigate these impacts by maintaining groundcover and building fire lines where possible to minimize erosion, conducting prescribe wildfires in a way that minimizes residence time on soil such as when soils are moist, and using broadcast burning rather than dozer piles to prevent excessive heat transfer to soil.

3.4.2.2.3. Impacts under Alternative A

Under Alternative A, current management of soils would continue under the 2020 ROD/MMPs, the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP. This alternative focuses on continuing existing land management practices and acreages for ROWs, grazing, recreation and OHV use, special designation areas, and forestry, fire, and vegetation management as guided by those existing management plans. The conditions and trends for vegetation as summarized in Section 3.4.4) would be expected to continue along similar trajectories. Alternative A, while promoting sustainable soil functions and protecting highly sensitive soils, would generally focus management actions on maintaining soil productivity for multiple uses.

Section 3.4.2.2.2 describes the impacts of ground-disturbing activities associated with management actions on sensitive soils, BSCs, and soil health and function. These impacts have the potential to occur under Alternative A on lands that are open to ROW authorizations, OHV use, recreation, and livestock grazing. Below is an overview of the acreages that would be impacted by Alternative A and the activities that could result in impacts to soils.

Lands and Realty

Under Alternative A, the BLM would continue to manage approximately 734,447 acres as open to ROW authorization. Impacts on soils from ROW activities, as described in Section 3.4.2.2.2, would continue in these areas. Under current management plans, the BLM would continue to manage 449,283 acres as ROW exclusion areas and 180,329 acres as ROW avoidance areas. Soil erosion and disturbance would continue to be reduced in these areas, thus maintaining soil health and function more effectively than in areas open to ROW authorizations.

Recreation and Visitor Services

Under Alternative A, 436,075 acres would continue to be closed to OHV travel, and OHV travel would be limited to designated routes on 928,080 acres. Soil erosion and disturbance as a direct result of recreational uses would be reduced in the areas closed or limited to OHV travel.

The BLM would continue to manage 1,077,685 acres as ERMA or SRMA, the highest amount of any alternative. Management under ERMA and SRMA would limit use to designated recreational areas that may impact soils, therefore reducing potential impacts outside of these areas. Additionally, ERMA and SRMA would indirectly protect soil resources due to the focus on maintaining and enhancing desired physical RSCs. The BLM would manage 416,563 acres as ACECs, WSAs, or WSRs, which would result in restrictions on surface-disturbing activities from OHV use, ROW authorizations, and forest products use.

Under Alternative A, 48,954 acres of LWC would be managed to prioritize the protection of those characteristics, the least amount of any alternative. Restrictions on surface-disturbing activities on lands within those lands would indirectly protect soil resources in these areas from surface-disturbing activities and would prevent a decline in soil health and productivity. Within LWC, only actions which are beneficial or non-impairing of the wilderness characteristics and that meet VRM Class II objectives would be allowed (Section 3.2.7).

Under Alternative A, access to all access points, trails, and climbing routes would remain open; however, if site-specific impacts exist, the closure or rerouting of access is permissible.

Livestock Grazing

Under Alternative A, the BLM would continue to manage 1,223,820 acres for livestock grazing, the most of any alternative, and 135,007 acres would be unavailable for livestock grazing. Impacts on soils from grazing, as described in Section 3.4.2.2.2 would be expected to continue in areas open to livestock grazing.

Vegetation Management

Under Alternative A, 648,392 acres would be closed, and 715,667 acres would be open to wood product harvest on NFS lands. Restricting harvesting and stipulating BMPs would contribute to protecting soil resources by limiting ground disturbance.

Under Alternative A, soils with high degradability susceptibility, high bare soil cover, low litter cover, or with BSC occurrence (see Appendix A, Figure 3-4, Spatial distribution of departures from expected soil conditions generated using inverse distance weighted interpolation of terrestrial AIM points; Figure 3-5, Change in BENM bare ground cover from the Rangeland Analysis Platform from 1997 to 2021; and Figure 3-6, Change in BENM litter cover from the Rangeland Analysis Platform from 1997 to 2021) would be at an increased risk of losing soil function and health because of ground-disturbing activities.

3.4.2.2.4. Impacts under Alternative B

Alternative B would allow for fewer soil-disturbing uses throughout the Monument, allowing for more soil protection than under Alternative A. While Alternative A focuses on maintaining soil productivity, Alternative B would focus on sustainable soil functions based on site-specific conditions and protecting sensitive soils and BSCs.

Under Alternative B, no surface-disturbing activities would be allowed on slopes greater than 40%, which is the same prohibition as Alternative A; however, under Alternative B, exceptions to this rule could only occur if activities would be consistent with the protection of BENM objects, providing more restrictions on when these activities could occur. Additionally, Alternative B requires an erosion control plan if discretionary actions cannot be avoided on slopes between 21% and 40%. These measures would contribute to minimizing the susceptibility of soils to wind and water erosion, and the loss of soil function associated with land management activities. Finally, Alternative B provides a path for restricting activities to protect sensitive soils in the Monument.

Section 3.4.2.2.2 above describes the impacts of ground-disturbing activities associated with management actions on sensitive soils, BSCs, and soil health and function. These impacts would apply to soils that would be disturbed under Alternative B. Any activity that results in increased erosion or topsoil disturbance, including ROW authorizations, OHV use, recreation, and livestock grazing, could impair soil health and function, and reduce BSC cover across the Planning Area. Below is an overview of the acreages that would be impacted by Alternative B and would result in impacts to soils.

Lands and Realty

Under Alternative B, 453,381 acres would be managed as ROW exclusion areas; 905,213 acres would be managed as ROW avoidance, which would be 65,836 more acres in ROW avoidance or exclusion than under Alternative A. Under Alternative B, 5,477 acres would be open to ROW authorization. This increased acreage in avoidance or exclusion areas would allow for reduced soil erosion and disturbance and would manage for increased soil health and function to a greater extent than Alternative A.

Recreation and Visitor Services

Alternative B would manage 25% more acres (566,627) as closed to OHV travel than Alternative A, with fewer acres (797,525) managed as OHV limited travel. Managing more acres as closed to OHV travel eliminates impacts as discussed in Section 3.4.2.2.2. Additionally, these closures would make accessing areas of the Monument more difficult, helping to protect soil resources in the areas proximate to the closures. Closing previously designated limited areas would reduce vehicular traffic and limit impacts to soils to a greater extent than under Alternative A.

Under Alternative B, the BLM would manage 668,681 acres as SRMAs, ERMA, or RMZs, which is 409,005 fewer acres than Alternative A. A total of 409,439 acres would be managed as ACECs, WSAs, or WSRs under Alternative B (587 more acres than Alternative A). Additionally, under Alternative B, 97,403 acres of LWC would be managed to prioritize the protection of those characteristics, almost twice the amount as Alternative A. Increasing acreage of LWC managed to protect those characteristics would provide for increased protection from surface-disturbing activities in these areas.

Livestock Grazing

Under Alternative B, in addition to the allotments that are unavailable for grazing under Alternative A, 28,027 additional acres would be unavailable for grazing. Acreage unavailable for grazing would protect soils from impacts as discussed in Section 3.4.2.2.2.

Vegetation Management

Under Alternative B, 433,148 acres would be closed, and 930,910 acres would be open to wood product harvest on NFS lands, which represents a 10% increase in acreages open to wood product harvesting compared to Alternative A. Additional acreage open to wood product harvest would potentially allow for more soil disturbance in these areas and may reduce the amount of organic matter being added to soils which could result in more soil compaction, reduced nutrient cycling, and increased temperatures. Stipulating BMPs would contribute to protecting soil resources by limiting ground disturbance.

3.4.2.2.5. Impacts under Alternative C

Management of soil resources under Alternative C has the same goals and objectives as Alternative B and would allow for fewer soil-disturbing uses throughout the Monument than under Alternative A. Management of soils under Alternative C focuses on maintaining sustainable soil functions based on site-specific conditions and protecting sensitive soils and BSCs. Under Alternative C, no discretionary actions would be allowed on slopes greater than 35%, and discretionary actions on slopes between 21% and 35% would require erosion control plans. These measures would contribute to minimizing the susceptibility of soils to wind and water erosion, and the loss of soil function associated with land management activities.

Section 3.4.2.2.2 describes impacts of ground-disturbing activities associated with management actions on sensitive soils, BSCs, and soil health and function. These impacts would apply to soils that would be disturbed under Alternative C. Any activity that results in increased erosion or topsoil disturbance could impair soil health and function and reduce BSC cover across the Planning Area. Below is an overview of the acreages that would be impacted by specific management actions under Alternative C; these could result in impacts on soils.

Lands and Realty

Under Alternative C, 552,278 acres would be managed for ROW exclusion, and 811,794 acres would be managed as ROW avoidance, which would be 524,242 acres more than Alternative A. Under Alternative C, there would be no land in the Monument open to ROW authorization. This increased acreage in avoidance or exclusion areas would allow for reduced soil erosion and disturbance and would manage for increased soil health and function to a greater extent than under Alternative A.

Recreation and Visitor Services

Alternative C provides 664,030 acres that would be closed to OHV travel, the second most of any alternative, and 700,122 acres would be managed as OHV limited travel. This represents a 51% increase in acreages closed to OHV travel compared to Alternative A. Managing more acres as closed to OHV travel reduces impacts as discussed in Section 3.4.2.2.2. Additionally, closing previously designated limited areas would reduce vehicular traffic and limit impacts to soils to a greater extent than Alternative A.

The number of acres managed as SRMAs, ERMAs, RMZs, ACECs, WSAs, WSRs, and LWC managed to protect those characteristics would be the same as under Alternative B. As mentioned above, various acreages managed as SRMAs, ERMAs, or RMZs are not likely relevant to soil resources if changes in surface disturbance do not occur. Alternative C would manage approximately twice the acreage of Alternative A as LWC, which would provide enhanced protection for soils due to increased restriction of surface disturbing activities.

Livestock Grazing

Alternative C would manage an additional 28,027 acres as unavailable for grazing than Alternative A. Acreage unavailable for grazing (including acreage made unavailable to grazing as a result of a permittee or lessee voluntarily relinquishing their grazing permit or lease) would provide more protection for soils from impacts as discussed in Section 3.4.2.2.2.

Vegetation Management

Under Alternative C, 433,148 acres would be closed, and 930,910 acres would be open to wood product harvest on NFS lands, which represents a 22% increase in acreages open to wood product harvesting compared to Alternative A. Additional acreage open to wood product harvest would potentially allow for more soil disturbance in these areas and can reduce the amount of organic matter being added to soils which could result in more soil compaction, reduced nutrient cycling, and increased temperatures. Stipulating BMPs would contribute to protecting soil resources by limiting ground disturbance.

3.4.2.2.6. Impacts under Alternative D

Alternative D would manage soils with the same goals and objectives as Alternatives B and C and would generally allow for fewer soil-disturbing uses throughout the Monument than Alternative A. Under Alternative D, no discretionary actions would be allowed on slopes greater than 30% unless necessary to protect BENM objects. Additionally, if discretionary actions cannot be avoided on slopes between 21% and 30%, an erosion control plan would be required. These measures would contribute to minimizing the susceptibility of soils to wind and water erosion, and the loss of soil function associated with land management activities to a greater extent than any other alternative.

Section 3.4.2.2.2 describes impacts of ground-disturbing activities associated with management actions on sensitive soils, BSCs, and soil health and function. These impacts would apply to soils that would be disturbed under Alternative D. Any activity that results in increased erosion or topsoil disturbance could impair soil health and function and reduce BSC cover across the Planning Area. Below is an overview of the acreages that would be impacted by specific management actions under Alternative D; these could result in impacts to soils.

Lands and Realty

Under Alternative D, 849,021 acres would be managed for ROW exclusion and 515,052 acres as ROW avoidance. Under Alternative D, there would be no land in the Monument open to ROW authorization. This increased acreage in avoidance or exclusion areas would allow for reduced soil erosion and disturbance and would manage for increased soil health and function to a greater extent than Alternative A.

Recreation and Visitor Services

Alternative D would manage 982,914 acres as closed to OHV travel, the most of any alternative, and 381,239 acres would be managed as OHV limited travel. This represents a doubling of

acres closed to OHV travel compared to Alternative A. Managing more acres as closed to OHV travel reduces impacts as discussed in Section 3.4.2.2.2. Additionally, closing areas that were previously designated limited areas would reduce vehicular traffic and limit impacts to soils to a greater extent than under Alternative A.

Alternative D would manage 488,530 acres as MAs and MZs, the lowest acreage of any alternative. Because management under MAs would limit use to designated recreational areas that may impact soils, therefore reducing potential impacts outside of these areas, this alternative may result in more overall potential impacts to soil resources. The largest number of acres of any alternative (1,054,322) would be managed as ACECs, WSAs, and WSRs. Compared to Alternative A, almost nine times the amount (419,128 acres) of LWC would be managed to prioritize the protection of those characteristics, providing greatly enhanced protection to soils from surface-disturbing activities.

Livestock Grazing

Alternative D would manage an additional 224,194 acres as unavailable for grazing than Alternative A, the most of any alternative. Acreage that would be unavailable for grazing under Alternative D would protect soils from impacts as discussed in Section 3.4.2.2.2.

Vegetation Management

Under Alternative D, 433,148 acres would be closed, and 930,910 acres would be open to wood product harvest on NFS lands, which represents a 22% increase in acreages open to wood product harvesting compared to Alternative A. Additional acreage open to wood product harvest would potentially allow for more soil disturbance in these areas and would reduce the amount of organic matter being added to soils, which could result in more soil compaction, reduced nutrient cycling, and increased temperatures.

3.4.2.2.7. Impacts under Alternative E

Soil management goals under Alternative E would be to maintain or improve soil quality and long-term soil productivity using culturally led standards, and to use collaboration with the BEC to benefit natural ecosystems, native species, and important relationships between water and soil. Alternative E focuses on ecosystem functioning and a return to natural states with regards to soil management. Additionally, Alternative E would emphasize Traditional Indigenous Knowledge and Tribal policies and guidelines, peer-reviewed literature based on the best available Western science, and best management including Traditional Indigenous Knowledge and practices to restore soil crusts.

Section 3.4.2.2.2 describes impacts of ground-disturbing activities associated with management actions on sensitive soils, BSCs, and soil health and function. These impacts would apply to soils that would be disturbed under Alternative E. Any activity that results in increased erosion or topsoil disturbance could impair soil health and function and reduce BSC cover across the Planning Area. Below is an overview of the acreages that would be impacted by specific management actions under Alternative E; these could result in impacts to soils.

Lands and Realty

A total of 1,104,956 acres would be managed for ROW exclusion, the most of any alternative, and 259,116 acres would be managed as ROW avoidance. Under Alternative E, there would be no land in the Monument open to ROW authorization.

Recreation and Visitor Services

Under Alternative E, 569,971 acres would be closed to OHV travel, the most of any alternative (the same number of acres as Alternative D), and 794,181 acres would be managed as OHV limited travel. Managing areas as closed to OHV travel reduces impacts as discussed in Section 3.4.2.2.2. Additionally, closing previously designated limited areas would reduce vehicular traffic and limit impacts to soils. Limiting recreation to existing or designated trails would likely reduce impacts to soils in comparison to Alternative A.

Under Alternative E, landscape-level management zones would be used to manage visitation and other recreation uses in a manner that would protect BENM objects. Approximately 98% of BENM would be in the Outback Zone and Remote Zone. These zones would provide a natural and self-directed visitor experience, and limited development of recreation facilities could result in more dispersed recreation, reducing concentrated impacts to soils but potentially dispersing impacts from visitors throughout the Monument. The number of acres managed as ACECs, WSAs, or WSRs would be greater than Alternatives A, B, and C. The same number of acres as Alternative D (419,128) would be managed as LWC, almost 10 times the amount as Alternative A, providing greatly enhanced protection to soils from surface-disturbing activities.

Livestock Grazing

Alternative E would manage an additional 28,027 acres as unavailable/not suitable for grazing compared to Alternative A. Soils in acreage unavailable for grazing would be protected from impacts from livestock grazing as discussed in Section 3.4.2.2.2, especially when these grazing acres are in areas where soils are not meeting expected ecological conditions (see Appendix A, Figure 3-4, Spatial distribution of departures from expected soil conditions generated using inverse distance weighted interpolation of terrestrial AIM points). Additional guidance under Alternative E, including prioritization of review and processing of grazing permits and leases; identifying subareas of allotments necessary for closure; reassessment of stocking levels and season of use; and identifying resource thresholds, monitoring, and automatic responses related to land health and/or impacts to cultural and sacred resources, would provide additional protection to soils from grazing.

Vegetation Management

Under Alternative E, there would be less allowance for mechanical vegetation management reducing the impacts these can have on soils. Commercial harvest would only be allowed on NFS lands if deemed necessary to protect BENM objects, greatly reducing the amount of commercial harvest and the resulting impacts to soil resources from heavy machinery and road construction used for harvesting. The acreage of areas open and closed to wood product harvest would be determined by a collaboration of the agencies and the BEC and would include adaptive management strategies. Adaptive management may reduce impacts to soil resources by allowing managers to make decisions that protect these resources if needed.

3.4.2.2.8. Cumulative Impacts

The cumulative effects analysis area for soil resources consists of BLM-administered lands, NFS lands, NPS lands, and adjacent state, Tribal, county, and privately owned lands surrounding BENM. It also considers historic events and activities, ongoing trends, and RFFAs. The analysis considers the combination of human activities, natural events, and exacerbating effects associated with climate change (see Appendix J).

Future trends for soils indicate a warmer and drier climate with less precipitation, resulting in increased drought conditions, wind erosion, and the production of dust. The USGS has recorded at least seven multiyear droughts in Utah from 1896 to 2002 (USGS 2003). The National Integrated Drought Information System (2008) recorded four more multiyear droughts in Utah from 2002 to present, with droughts becoming increasingly common and more severe than in the past (Littell et al. 2016; Seager et al. 2007). Trends in the soil water balance over time have shown a greater water deficit within the soil of topographically diverse environments (escarpments and mesa lands), which are generally associated with pinyon-juniper and/or shrubland vegetation (D'Amore and Kane 2016). Although drought conditions are becoming more severe, models predict more intense precipitation in non-drought years (Gregg et al. 2013) leading to greater potential for erosion, mass wasting, and flooding. Changes in frequency and magnitude of summer rainfall can be particularly harmful to BSC organisms (such as mosses) that are physiologically stressed by cycles of drought interrupted by small rainfall events, wherein these organisms partially hydrate and rapidly desiccate (Barker et al. 2005).

The interactions of increased soil temperature and changes in type and amount of precipitation will also affect soil functions differently across different soil types. Finer soil textures are expected to buffer changes in climate more readily than coarse soil textures, and those areas with finer soil textures will experience change more slowly. Soil carbon changes could lead to changes in soil structure, soil bulk density, and soil porosity, changing water infiltration rates and rooting depth. Altered soil carbon could also result in changes in nutrient availability and overall fertility of soils. Warmer soil temperatures will likely lead to increased losses of soil carbon (D'Amore and Kane 2016). Two of the predominant soil types within the Monument, Alfisols and Mollisols, have a moderate susceptibility to carbon losses, while Aridisols and Entisols have a lower susceptibility to carbon losses due to inherently low soil carbon content (D'Amore and Kane 2016).

There are expected to be more ROW grants or leases associated with infrastructure development projects in the future. These would include projects such as utility lines, access roads, and waterlines. Specific projects that are currently under development include a new access road to state lands near Fry Canyon (0.15 acre) and ongoing road maintenance across the Monument. In addition, future actions include the building of water storage facilities and water well drilling (like the Slickhorn allotment water wells, Red House Cliffs water wells, Lockhart allotment range improvements), which would cause ground disturbance and impact soil resources. Any ongoing or proposed ROW development projects (like the Summit Operating, LLC, pipeline ROW impacting 7.52 acres and the Mancos Mesa ROW access impacting 8 acres) (see full list in Appendix J) would increase the total footprint of disturbed soils within the Planning Area, which would have an additive effect from any vegetation removal and manipulation, grading, excavation, and soil displacement. Effects would include the temporary loss of soils through erosion and decreased soil productivity.

Recreation and visitor use are expected to increase in the future. The activities identified as having growth potential include hiking, backpacking, mountain biking, OHV use, and applications for special recreational permits and recreational use permits. Future trail and campground systems that will result in additional ground disturbance include the Bluff River Trail (6.7 miles of trail), reconstruction of the Salt Creek Trail (<1 mile of trail), the Goosenecks Campground and Trails (12 acres of new disturbance), and the Hamburger Rock Campground Improvements and Expansions (2 acres of new disturbance). Although these projects will increase localized disturbance, they may disperse visitors out of other areas and limit soil disturbance to those areas authorized for specific recreational impacts.

Impacts from all these activities would primarily be localized to existing and established trails and routes; therefore, losses to soil resources would be limited to those areas; however, travel outside

designated or existing routes and creation of social trails have occurred and would likely occur within the Decision Area, further expanding the footprint of soil disturbance and the potential for soil erosional losses.

Trends in livestock grazing would depend on several environmental factors; however, the BLM and USDA Forest Service would continue to administer rangeland health evaluations to ensure no substantial loss of soil productivity occurs in response to changes in range management. Planned allotment range improvements such as within the Lockhart (0.25 acre), Indian Creek (2.5 acres), Slickhorn (0.75 acre), and Lake Canyon Allotments (3.8 acres), will contribute to reducing pressures on soils outside of the range allotments.

Vegetation communities are expected to be strongly impacted by climate change, increased frequency and intensity of fires, insect and disease outbreaks, weed infestations, and ongoing drought conditions. Some vegetation communities are projected to drastically change in response to these changes, including shifts in evergreen forests and expansion of grassland communities in some areas. Any dramatic shifts in vegetation community structure, as would occur in responses to catastrophic fires and landslides, would be accompanied by soil instability and erosional losses until landscapes reach equilibrium under new vegetation communities. Vegetation treatments aimed at reducing hazardous fuels and undesirable vegetation would be aimed at creating more resilient landscapes with more stable soil surfaces that are less prone to erosional losses and mass wasting. Prescribed fire treatments will be implemented by NFS within two areas of the Monument through the North Elk Ridge Forest Health Project (approximately 12,700 acres) and the Mormon Pasture Mountain Wildlife Habitat Improvement Project (1,915 acres) to reduce continuity of existing vegetative fuels within ponderosa pine and aspen-mixed conifer forests. These projects will have short-term adverse impacts on soils but are expected to have a long-term beneficial impact on the ecosystem and on soils by decreasing the likelihood of larger, catastrophic wildfires within those areas of the Monument.

3.4.3. Water Resources

3.4.3.1. AFFECTED ENVIRONMENT

3.4.3.1.1. Surface Water

The Planning Area crosses four HUC 8 subbasins. The subbasins and acreages within the Planning Area are included in Table 3-11.

Table 3-11. Hydrologic Unit Code 8 Subbasins within the Planning Area

Subbasin	Total Acres	Acres In Planning Area	Percentage of Subbasin In Planning Area
Lower San Juan Basin (HUC 14080205)	1,560,132	316,604	20%
Lower San Juan-Four Corners Subbasin (HUC 14080201)	1,455,312	268,009	18%
Upper Lake Powell Subbasin (HUC 14070001)	1,828,839	529,207	29%
Upper Colorado-Kane Springs Subbasin (HUC 14030005)	1,276,010	376,801	30%

Approximately 19% of the Planning Area is land managed by the USDA Forest Service. This subset of the Planning Area consists of 3,697 acres within the Lower San Juan Basin, 106,249 acres within the Lower San Juan-Four Corners Subbasin, 65,728 acres within the Upper Colorado-Kane

Springs Subbasin, and 113,436 acres within the Upper Lake Powell Subbasin (Appendix A, Figure 3-7, Planning Area hydrologic unit code 8 subbasins and hydrologic unit code 12 watershed boundaries).

Approximately 72% of the Planning Area is land administered by the BLM, 0.9% is private land, and 8% is land managed by the state (UGRC 2023).

See Appendix I, Table I-1 for a list of HUC 12 watersheds, total acreage, and percentage of the HUC 12 watershed within the Planning Area boundary.

Hydrology

Several important major rivers flow through or proximate to the Planning Area. The largest are the Colorado River on the northwest and the San Juan River on the southern boundary of the Planning Area. The San Juan River is a tributary to the Colorado River and drains southwestern Colorado, northeastern New Mexico, and parts of southeastern Utah and runs along the southern Planning Area boundary for approximately 100 miles. Additionally, the Colorado River and the San Juan River feature in aspects of Hopi history and geography in this region. *Pisisvayu* (Colorado River) is important in the history and traditions of many Hopi clans. Some clans use water collected from the Colorado River in their kiva ceremonies. The Hopi Tribe considers *Pisisvayu* to be a traditional cultural property eligible for the National Register under Criteria A, B, C, and D. The Colorado River is significant for its association with important Hopi creation traditions, clan histories, and ongoing religious activities” (see Appendix L).

As described in the 2022 BEITC LMP,

Watersheds were historically used by the Ute people to navigate their ancestral lands. Historic networks of trail systems used drainages as travel corridors. Place names of drainages and springs connect these travel routes to past lifeways and stories. The San Juan River, as well as other rivers including the Colorado and Green, have served to define the territories of different bands of Utes. They have also served to separate them from other people, including the Navajo, during times of conflict. (Appendix L:18)

On the west side of the Planning Area, the Upper Lake Powell Subbasin (HUC 14070001) drains into Glen Canyon and includes the Gypsum Canyon, Dark Canyon, White Canyon, Cedar Canyon, and Moqui Canyon drainages. On the south side of the Planning Area, the Lower San Juan Basin (HUC 14080205) drains into the San Juan River and includes the Grand Gulch, Slickhorn Canyon, John’s Canyon, and Lime Creek drainages. On the southeast side of the Planning Area, the Lower San Juan-Four Corners Subbasin (HUC 14080201) drains into the San Juan River. Drainages include Comb Wash, Butler Wash, and Cottonwood Wash. The northern portion of the Planning Area crosses into the Upper Colorado-Kane Springs Subbasin (HUC 14030005) and includes the Indian Creek, North Cottonwood Creek, Lockhart Canyon, and Dripping Springs drainages.

Many stream segments in the Planning Area have intermittent (flowing more than 30 days in a row) to perennial (year-round) flows. Base flows in these stream segments are primarily fed by groundwater via springs and seeps and may be augmented by snowmelt and runoff from rain events. Interrupted flow in both perennial and intermittent stream systems is common, and the dimensions of the wetted area may vary seasonally based upon available precipitation. Based on National Hydrography Dataset mapping for this area, the Planning Area has a total of approximately 6,124 miles of streams or washes. Of that total length, 5,938 miles are intermittent or ephemeral streams and 95 miles are perennial streams (Table 3-12). The National Hydrography Dataset is approximate in regards to flow regimes and does not accurately reflect many of the

perennial, intermittent, and ephemeral segments. There are stream and river segments classified as perennial for which local resource specialists have not observed year-round flow, and other segments classified as intermittent that have been known to have year-round flow. At this time, local BLM hydrologists are working on an updated dataset for stream classification in the Monument to use as a more representative dataset.

Flash floods are a natural and expected event in this area. A flash flood is a rapid rise of water (generally within 6 hours) along a stream or low-lying area after a heavy rainfall. Flash floods can damage water resources and related infrastructure (e.g., roads, campgrounds, trails, range improvements). For example, flash floods can damage fences and instream pipelines and increase the potential for erosion by stripping vegetation and other soil-stabilizing agents from the landscape. Flash floods can also alter drainage patterns and deposit unusually high volumes of sediment or pollutants in water sources. The longevity of impacts from flash floods varies depending on several factors, including the location, intensity, and duration of the flash flood; the functionality and stability of the floodplain; the stability and integrity of the uplands; and the location and type of structures within the flood path.

Flash flooding, however, can also benefit water resources by providing inundated floodplain habitat for fish and wildlife, scouring seed beds for cottonwood (*Populus spp.*) establishment, distributing nutrients to the floodplain, entraining woody debris that drives the creation of aquatic habitat diversity, and increasing bank and floodplain waters storage and recharge.

Table 3-12. National Hydrography Dataset Features within the Planning Area by Landownership

Type	Miles					Total
	BLM	Private	State	USDA Forest Service	USDA Forest Service Wilderness Area	
Other*	9	5	1	5	0	20
Stream/River: Intermittent and ephemeral	4,183	68	427	996	263	5,937
Stream/River: Perennial	50	13	4	27	0	94
Total	4,242	87	433	1,027	263	6,051

* "Other" category includes Canal/Ditch, Connectors, and Pipeline features.

In-stream flow has been measured in a subset of streams and rivers throughout the Planning Area. See Table 3-13 for a list of historical and active USGS stream flow monitoring stations and stream gauges in the Planning Area.

Table 3-13. U.S. Geological Survey Flow Gauges in the Planning Area

USGS Gauge Station No.	Stream Name	Location	Status	Period of Record
9379000	Comb Wash	Near Bluff, Utah	Inactive	1/1/1959 to 9/29/1968
9378700	Cottonwood Wash	Near Blanding, Utah	Inactive	10/1/1964 to 9/29/1987

USGS Gauge Station No.	Stream Name	Location	Status	Period of Record
9186500	Indian Creek	Above Cottonwood Creek, near Monticello, Utah	Inactive	4/7/1988 to 10/7/1991
9187000	Cottonwood Creek	Near Monticello, Utah	Inactive	10/1/1949 to 9/29/1957
9187550	Indian Creek	Below Bogus Pocket, near Monticello, Utah	Inactive	4/1/1983 to 3/2/1988
9187500	Indian Creek	Above Harts Draw, near Monticello, Utah	Inactive	10/1/1949 to 1/31/1984
Potash to 9185600	Colorado River: Potash	Near Moab Utah	Active	10/29/2014 to 10/23/2023
9379500	San Juan River	Near Bluff, Utah	Active	10/30/1914 to 10/23/2023

Water Quality

Surface water quality conditions are monitored by collecting field data, including stream temperature and flow, and conducting water chemistry and macroinvertebrate sampling. The BLM participates in a cooperative program with the UDWQ to sample sites for water chemistry and biotic components. BLM personnel take field measurements and collect grab samples, and the State of Utah provides laboratory analysis and data management. BLM has coordinated with UDWQ to establish long-term water quality monitoring sites throughout the Planning Area that are monitored following approved sampling protocols and on a frequent basis (10 times in a 1-year period).

Every other year, UDWQ compiles all relatively recent data that meet state protocol requirements and conducts analyses to determine whether water quality conditions are meeting state water quality standards and associated beneficial uses assigned to waters in Utah (UDWQ 2022). The *Final 2022 Integrated Report on Water Quality* (Integrated Report) is submitted to EPA for approval, and includes Section 305(b) and 303(d) of the Clean Water Act (CWA) list, which list all waters of the United States and their current assessment of water quality conditions, noting which stream segments are considered fully supporting state standards, not supporting state standards (impaired), or do not have sufficient information to make determinations. These lists also provide information on any parameters of concern and the associated beneficial use. A TMDL report will be completed by UDWQ for each impaired waterbody describing the pollutant loading, potential causes of impairment, and suggested management actions to remedy impaired conditions. Table 3-14 identifies the assessment units (aUs) in the Planning Area boundary and the cause of impairment. Data reported here are from the 2022 reporting year (UDWQ 2022).

The BLM has conducted bacteriological monitoring in Grand Gulch (total and fecal coliform) and has coordinated with the San Juan County Health Department. Causes of water quality impairment in the Planning Area include high stream temperatures, low dissolved oxygen levels, high sediment loads, high nutrient levels, and high levels of total dissolved solids (TDS), salinity, and high coliform bacteria. High stream temperatures and low dissolved oxygen levels are associated with low stream flow conditions but can also be due to lack of riparian vegetation and associated shading. High sediment loads are often associated with natural flood events but can be increased by land use disturbances upstream in the watershed, including development of roadways and recreational vehicle trails, construction activities, and livestock grazing. Additionally, high nutrient levels and *Escherichia coli* (*E. coli*)/coliform levels can be the result of livestock use, heavy wildlife use or recreation use. High TDS and salinity levels are often due to natural water chemistry conditions but

can be increased due to water developments reducing flows or increased sediment loading due to increased erosion. There are also water quality concerns with high levels of radioactive materials, including uranium byproducts (measured by gross alpha levels) as documented in the 2002 TMDL report for Cottonwood Wash.

Several UDWQ aUs cross into the Planning Area (Appendix A, Figure 3-8, BENM Planning Area and Utah Division of Water Quality assessment units). Table 3-14 lists these aUs and the assessment results from the 2022 Integrated Report. The 303(d) listed waters include impairments resulting from elevated temperature, selenium, dissolved solids, dissolved oxygen, radium, iron, lead, cadmium, aluminum, copper, and mercury. In some cases, land use activities may contribute to water quality impairment, whether by direct effects, such as those of animal and/or human waste on dissolved oxygen or nutrients (nitrogen or phosphorus), or by indirect effects, such as by increasing erosion, which increases sediment loading (turbidity), TDS, and associated metals. Such effects may also impair benthic macroinvertebrate and fish habitat and result in low observed/expected bioassessment scores. Surface interaction with groundwater is another possible source of contamination. The White Mesa Mill is a uranium mill located just south and east of the Planning Area. UDWQ operates and maintains several monitoring wells on BLM-administered lands near the White Mesa Mill and has documented groundwater contamination of trace metals adjacent to the mill (USGS 2012). The BLM has also completed macroinvertebrate sampling as part of lotic AIM sampling. These samples have been processed by the National Aquatic Monitoring Center with observed to expected indicators reported and is available at <https://namc-usu.org/data>.

Table 3-14. List of Utah 303(d) Waters within the Planning Area for Reporting Year 2022

AU Name	Beneficial Use Classification*	Assessment Results	Cause of Impairment	AU Acres†	Acres in BENM†
Butler Wash	1C, 2A, 3B, 4	3: Insufficient data. Need more.	None documented	35,746	34,299
Colorado River-3	1C, 2A, 3B, 4	4A: Approved TMDL. Impaired.	Use Class 3B: selenium	12,188	801
Comb Wash	1C, 2A, 3B, 4	5: TMDL required. 303(d) impaired.	Use Class 3B: dissolved oxygen, selenium, temperature, benthic invertebrate assessment; Use Class 4: TDS	184,674	181,491
Cottonwood Wash-1	1C, 2A, 3B, 4	2: Supports all assessed uses.	None	62,816	38,855
Cottonwood Wash-2	1C, 2A, 3B, 4	5/4A: TMDL required/TMDL approved.	Use Class 1C: radium, arsenic, alpha particles; Use Class 3B: dissolved oxygen, temperature	57,318	23,219
Cottonwood Wash-3	1C, 2A, 3B, 4	5/4A: TMDL required/TMDL approved.	Use Class 1C: radium, alpha particles; Use Class 4: radium, alpha particles	86,144	85,918
Grand Gulch	1C, 2A, 3B, 4	3: Insufficient data. Need more.	None documented	115,458	114,130

AU Name	Beneficial Use Classification*	Assessment Results	Cause of Impairment	AU Acres†	Acres in BENM†
Harts Draw	1C, 2A, 3B, 4	3: Insufficient data. Need more.	None documented	79,390	19,814
Indian Creek-1	1C, 2A, 3B, 4	3: Insufficient data. Need more.	None documented	18,592	18,585
Indian Creek-2	1C, 2B, 3A, 4	2: Supports all assessed uses.	None	22,538	9,543
Johnson Creek	1C, 2B, 3A, 4	5: TMDL required. 303(d) impaired.	Use Class 3A: dissolved oxygen, temperature	15,548	1,233
Kane Spring Wash	2B, 3C, 4	5: TMDL required. 303(d) impaired.	Use Class 3C: temperature; Use Class 4: TDS	418,144	38
North Cottonwood Creek	1C, 2A, 3B, 4	5: TMDL required. 303(d) impaired.	Use Class 3B: benthic invertebrate assessment	73,968	73,903
Recapture Creek-1	1C, 2A, 3B, 4	5: TMDL required. Impaired 303(d) list.	Use Class 3B: dissolved oxygen	104,399	802
Salt Creek-Canyonlands	1C, 2A, 3B, 4	3: Insufficient data. Need more.	None documented	74,410	18,437
San Juan River-1	1C, 2A, 3B, 4	5: TMDL required. 303(d) impaired.	Use Class 1C: <i>E. coli</i> , lead, thallium Use Class 2A: <i>E. coli</i> Use Class 3B: lead, thallium, copper, iron	7,492	868
San Juan River-1 Tributaries	1C, 2A, 3B, 4	5: TMDL required. 303(d) impaired.	Use Class 4: TDS	170,916	133,289
San Juan River-2	1C, 2A, 3B, 4	5: TMDL required. 303(d) impaired.	Use Class 1C: <i>E. coli</i> , thallium; Use Class 2A: <i>E. coli</i> ; Use Class 3B: Iron, lead, cadmium, benthic invertebrate assessment	4,708	910
Westwater Creek	1C, 2A, 3B, 4	5: TMDL required. 303(d) impaired.	Use Class 3B: temperature; Use Class 4: TDS	18,807	92
White Canyon	1C, 2A, 3B, 4	3: Insufficient data. Need more.	None documented	177,299	166,008

Note: Although there are impaired waters identified in the watersheds that cross into the Planning Area, the BLM and USDA Forest Service are only responsible for management of streams within the Planning Area. UDWQ completed a TMDL report for Cottonwood Wash in 2002 based on impairments to water quality related to high gross alpha radiation readings in samples from the stream at multiple sites. This TMDL concluded that although levels of uranium may be high naturally, there were additional inputs from several abandoned mines along the stream that could be mitigated by reclamation of these abandoned mining areas. Recommended management actions on BLM-administered lands have been conducted. The EPA is currently conducting more rigorous sampling of soils and vegetation in this drainage to determine health risks and current conditions in this area.

* Beneficial Use Classifications identify the use and value of a waterbody for source water for domestic water systems, aquatic wildlife, recreation, and agriculture.

† Acreages have been rounded to the nearest whole number.

The BENM Planning Area is located within the Upper Colorado River Basin, where salinity is a regional and national concern. With the passing of the Colorado River Basin Salinity Control Act of 1974 (PL 93-320) and subsequent public laws, the DOI was mandated to implement salinity control actions in the Colorado River Basin.

The primary nonpoint source of salinity in the Planning Area is runoff from saline soils and erosion and transport of saline soils during flow events. Any surface activities that occur on these soils have

the potential to increase erosion and associated salinity and sediment loading to the Colorado River Basin, especially when the soils are wet and easily compacted. See Section 3.4.2 for more information on soils in the Planning Area. Another source of salinity in the Planning Area is from highly saline groundwater contributions to springs, seeps, and spring-fed streams. This can be seen in the Lime Creek watershed where springs are naturally high in salinity.

Watershed restoration activities have occurred in BENM, beginning in the 1950s with contouring, furrowing, and seeding. Other watershed restoration actions include fencing, recreation management, travel management and grazing strategies that include rest-rotation of pastures and seasonal rotations. These types of restoration activities aid in pollutant loading reductions to surface waters by reducing stormwater runoff by encouraging infiltration into the soils before reaching the stream channels (Naftz et al. 2011).

VEHICLE RECREATION MONITORING

Detailed water sampling was conducted as part of a monitoring program for vehicle recreation permits, including Jeep Safari, ATV Safari, Jeep Jamboree, and other events. Samples were collected by BLM staff in Arch Creek from 2003 to 2010 at two locations: sample site "Arch Ck near mouth" and sample site "Arch Ck 4 miles above Comb Wash." Sample site Arch Ck near mouth is located downstream of all but one (59/60) road crossings of Arch Creek and serves as a comprehensive site for measuring the effect of recreational vehicles on water quality. Samples were usually taken several days before an event, the day of the event, and several days after the event. Laboratory tests included several hydrocarbon analyses, total suspended solids, and TDS. Field data collected included pH, specific conductivity, stream temperature, turbidity, and stream flows.

Hydrocarbon analysis included total recoverable petroleum hydrocarbons, total petroleum hydrocarbons-diesel range organics, and total petroleum hydrocarbons gasoline range organics (TPH-g). Minor amounts of total recoverable petroleum hydrocarbons, which include oil and grease, were detected after several permitted events. Values ranged from 3.3 to 3.7 mg/L, all above the level of detection (3.0 mg/L).

Vehicles, especially oil and grease from the undercarriage, are the most likely source of these hydrocarbons. As vehicles cross a stream, water splashes on the undercarriage and can wash dirt, grease, and any leaking fluids into the stream. During high stream flow, these levels can increase because the vehicles travel through deeper water crossing the stream.

The State of Utah standard for turbidity is a change of less than 10 nephelometric turbidity units (NTUs), usually comparing upstream and downstream of an activity. Turbidity increased from 10 NTUs pre-event to 61 NTUs on the day of the event, with a reduced level of 6 NTUs post-event. With a consistent stream flow and no other disturbances to the stream, this general comparison indicates an increase in sediment load on the day of the event, decreasing within hours of recreational vehicle disturbance. Although it is difficult to quantify the sediment contribution from vehicle use, it can be assumed that vehicles resuspend sediment already present in the streambed when crossing the stream.

Other parameters sampled during the permitted events are determined to not be influenced exclusively by recreational vehicles. Stream temperature, dissolved oxygen, and total phosphorous levels have been elevated at the sample locations but are related to the high daytime temperatures and low-flow conditions during mid- to late summer.

Although this effort was focused on one area of the Monument, it points to water contamination from vehicle disturbance and the need for additional data on this activity throughout the Monument.

TRIBAL IMPORTANCE OF WATER

As described in the 2022 BEITC LMP, Indigenous peoples value water as the foundation of life, a living entity that must be protected in all forms. Indigenous people have not only a physical reliance on the water in BENM, but also a spiritual connection, believing that natural sources of water are where spiritual beings reside. Additionally, waterbodies and the features they have created within BENM define the Tribal homeland and serve as a connection to Tribal history and culture.

BLM Lotic Assessment, Inventory, and Monitoring Strategy

The BLM has implemented the National Aquatic Monitoring Framework (Miller et al. 2015) to monitor the condition and trend of aquatic systems. As part of the AIM Strategy, this framework provides the BLM with a consistent standardized methodology for collecting and analyzing data and to inform management decisions on permitted land uses based on watershed health. The lotic AIM protocol (BLM TR 1735-2) contains 11 core methods, eight contingent methods, and several covariates applicable to perennial wadeable streams. The methodology addresses the following:

- Water quality
- Watershed function and instream habitat quality
- Biodiversity and riparian habitat quality
- Ecological processes

From 2013 to 2022, lotic AIM data have been collected during 36 sampling events at 30 unique reaches within and adjacent to BENM (Appendix A, Figure 3-16, Terrestrial and lotic AIM data points within BENM administrative boundaries). To assess conditions of lotic AIM reaches, 11 indicators were selected and analyzed based on their predicted stress response (Appendix K, Table K-1). Indicators were evaluated against established benchmarks (Appendix K, Table K-2). Degree of departure from benchmark values are reported as major, moderate, or minimal. These departure classes were converted to values (major = 1, moderate = 0.5, minimal = 0) across all indicators for each reach, and then averaged to create a reach departure score ranging from 0 to 1 (Appendix A, Figure 3-9, BENM site condition scores and hydrologic unit code 12 average condition score).

Points were aggregated into their respective lotic AIM assessment area, which was a modified HUC 12 subwatershed (Appendix A, Figure 3-9, BENM site condition scores and hydrologic unit code 12 average condition score; see Appendix K, Table K-3). Lotic AIM water quality conditions were also compared with UDWQ assessments. Of the 12 lotic AIM assessment areas, eight fall into aUs that are impaired (303(d) listed), one falls into an AU that is supporting designated and assessed uses, and three fall into aUs that have not been assessed (Appendix A, Figure 3-10, Assessment units, lotic assessment areas, and lotic AIM point locations). For more information on AIM data, see Appendix K.

Watershed Condition Framework

The USDA Forest Service established the Watershed Condition Framework in 2010 to provide a consistent and comparable process for assessing watershed health. This tool was developed as part of the USDA *Strategic Plan FY 2010-2015* (USDA Forest Service 2011b). Within the Watershed Condition Framework, watersheds are categorized into three classes based on several attributes consisting of slope stability, soil erosion, channel morphology, upslope habitat characteristics,

riparian habitat characteristics, aquatic habitat characteristics, flow, sediment, water-quality attributes, aquatic species, terrestrial vegetation, and soil productivity. These three classes are as follows (USDA Forest Service 2011b):

- Class 1 – Watersheds exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.
- Class 2 – Watersheds exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.
- Class 3 – Watersheds exhibit low geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Using this framework, a watershed is considered in good condition if it is functioning in a manner similar to one found in natural wildland conditions. This characterization should not be interpreted to mean that managed watersheds cannot be in good condition. A watershed is considered to be functioning properly if the physical attributes are appropriate to maintain or improve biological integrity. This consideration implies that a Class 1 watershed in properly functioning condition has minimal undesirable human impact to natural, physical, or biological processes and is resilient and able to recover to the desired condition when or if disturbed by large natural disturbances or land management activities. By contrast, a Class 3 watershed has impaired function because some physical, hydrological, or biological threshold has been exceeded. Substantial changes to the factors that caused the degraded state are commonly needed to set them on a trend or trajectory of improving conditions that sustain physical, hydrological, and biological integrity.

Within BENM, the USDA Forest Service has assessed watersheds within NFS management boundaries in 2010 and in 2021. Final watershed condition scores are summarized in Table 3-15.

Table 3-15. National Forest System 2010 and 2021 Watershed Condition Scores

HUC 12	HUC 12 Name	Total Acres	NFS Acres	Non-NFS Acres	Percentage NFS Acres	2010 Watershed Condition Score	2010 Watershed Class	2021 Watershed Condition Score	2021 Watershed Class
140300020902	Deer Creek-La Sal Creek	24,859	14,622	10,237	59	1.68	Class 2	2.20	Class 2
140300050404	Horse Creek-Mill Creek	28,052	13,856	14,196	49	1.49	Class 1	1.69	Class 2
140802010301	Johnson Creek	15,548	12,501	3,047	80	1.86	Class 2	2.04	Class 2
140600090101	Left Fork Huntington Creek	30,562	27,215	3,347	89	1.74	Class 2	1.66	Class 1
140600090202	Lowry Water	43,944	42,675	1,270	97	1.78	Class 2	1.83	Class 2
140600090102	Right Fork Huntington Creek	40,132	31,500	8,633	78	2.02	Class 2	2.15	Class 2
140300050401	Upper Pack Creek	19,411	18,162	1,249	94	1.77	Class 2	2.12	Class 2
140700010203	Peavine Canyon	18,714	18,714	0	100	1.27	Class 1	2.01	Class 2

Watersheds within the Manti-La Sal National Forest are managed by the USDA Forest Service to improve the condition class. This includes physical attributes that improve biological integrity. The presence of invasive species of flora, including reeds and trees, diminishes the indigenous biological diversity critical for a watershed to be classified in Class 1. The USDA Forest Service has internal programs to improve watersheds by eradication of invasive species. The internal program, the Watershed Improvement Tool, provides efforts to treat and remove tamarisk (*Tamarix ramosissima*) along streams. In 2015, the Watershed Improvement Tool resulted in the biological herbicide treatments of 7.1 miles of streams within BENM and the physical removal of tamarisk along an additional 2.5 miles of streams within the Monument. These efforts aim to increase water resources to indigenous species, improve the natural habitat of fauna, and increase the overall condition of these watersheds. See Section 3.4.5 for more information on invasive vegetation removal.

Wetlands and Riparian Areas

Riparian areas are a transition zone between the stream channel and upland areas. Perennial (yearlong) and intermittent (seasonal) stream systems typically support riparian areas. The extent of the riparian zone depends on water availability, defined by the amount, timing, duration, and source. Wetland areas are defined as areas of land directly influenced by permanent (surface or subsurface) water, and have visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks with perennial water flow are typical riparian areas. They include wetlands and those portions of floodplains and valley bottoms that support riparian vegetation (Meehan 1991). In the arid Southwest, riparian ecosystems depend on water availability, defined by the amount, timing, duration, and source.

It is important to note that an ephemeral stream is one that flows only in direct response to precipitation and whose channel is at all times above the water table. In some cases, intermittent or ephemeral streams that do not currently exhibit riparian characteristics may in fact be connected to a water table and could potentially develop riparian attributes with management changes.

Wetlands and riparian areas are among the most important, productive, and diverse ecosystems in the state. Wetland areas—occurring on streambanks and floodplains, at springs, seeps, wet meadows, sloughs, marshes, swamps, and bogs—are all important resources for aquatic organisms, wildlife, grazing, and recreation. Wetland areas provide many benefits in the area, including filtering and purifying water, reducing sediment loads and enhancing soil stability, contributing to groundwater recharge, dissipating high-energy flows (floods), providing thermal refugia and habitat for obligate species, and supporting greater biodiversity. Wetland and riparian areas are often used as indicators of overall land health and watershed conditions because they are fragile resources and are often some of the first landscape features to reflect impacts from management activities. Within the arid Southwest, wetlands are heavily reliant on the duration, frequency, and source of water availability.

Based on the National Wetlands Inventory (NWI) data, there is approximately 1,728 acres of Palustrine and Lacustrine wetlands within the Planning Area (USFWS 2022) (Table 3-16). It is likely the NWI data are overestimating Riverine wetlands in BENM. The NWI data Riverine, Intermittent category includes predominantly ephemeral streams lacking riparian or aquatic habitat. NWI and National Hydrography Dataset data also incorrectly categorize some true perennial systems as intermittent, and also do not include many of the smaller spring systems such as hanging gardens and other seep springs.

Table 3-16. National Wetlands Inventory Data within the Planning Area by Landownership

Wetland Type	Wetland Classification*	Acres					Total
		BLM	Private	State	USDA Forest Service	USDA Forest Service Wilderness Area	
Freshwater Emergent Wetland	Palustrine, Emergent	73	4	14	41	20	152
Freshwater Forested/Shrub Wetland	Palustrine, Forested	36	0	0	0	0	36
	Palustrine, Scrub-Shrub	664	36	26	6	4	736
Freshwater Pond	Palustrine, Aquatic Bed	19	1	3	34	0	58
	Palustrine, Unconsolidated Bottom	1	0	0	3	0	4
	Palustrine, Unconsolidated Shore	63	2	5	10	0	80
Lake	Lacustrine, Limnetic	0	37	0	0	0	37
Riverine	Riverine†	10,586	170	1,092	2,431	658	14,937
Total		11,905	292	1,184	2,602	683	16,665

* Based on NWI classification codes (USFWS 2022).

† These are taken from the National Hydrography Dataset and added as a layer to NWI and may not accurately reflect the amount of very limited wetland habitat and riparian habitat in BENM.

Riparian areas include streambanks, riverbanks, and floodplains. Healthy riparian systems filter and purify water as it moves through riparian zones, reduce sediment loads and enhance soil stability, reduce destructive energies associated with flood events, provide physical and thermal microclimates in relation to the surrounding uplands, and contribute to groundwater recharge and base flow (BLM 1993). Significant changes to surface flows and vegetation communities have occurred throughout the arid West and have led to a change in the distribution of riparian ecosystems (Webb et al. 2007). Many of these changes are a result of a global rise in temperatures, which affects the vulnerable species and water resources of the Southwest, increases water withdrawals, and subsequently changes dam management (NPS 2017). Increased temperatures cause droughts that may be more severe, and precipitation is more likely to come during extreme precipitation events (NPS 2017). Drastic swings in temperature and changing climate impact surface flows through decreased runoff and decreased precipitation. Vegetation communities are also impacted by increased temperature and shifts in precipitation (NPS 2017).

Riparian areas generally occur on the landscape where water is present in greater quantities or with greater frequency but can take a variety of forms. Xeroriparian areas consist of denser vegetation that subsists on occasional flows along ephemeral washes. Hydroriparian areas consist of areas of vegetation that use shallow groundwater along lakes, wetlands, or perennial streams. There are approximately 4,970 acres of riparian habitat mapped within the Planning Area (Table 3-17; Appendix A, Figure 3-13, Riparian LANDFIRE vegetation types within the Planning Area) (LANDFIRE 2020).

Table 3-17. LANDFIRE Riparian Cover Types (acres) within the Planning Area

LANDFIRE Cover Type	BLM	Private	State	USDA Forest Service	USDA Forest Service Wilderness Area	Total
Interior West Ruderal Riparian Forest	432	32	15	0	0	479
Interior West Ruderal Riparian Scrub	825	67	65	38	5	1,000
Rocky Mountain Lower Montane-Foothill Riparian Shrubland	55	13	6	209	18	302
Rocky Mountain Lower Montane-Foothill Riparian Woodland	1,349	286	94	1,247	222	3,198
Rocky Mountain Subalpine-Montane Riparian Shrubland	2	0	<1	19	0	21
Rocky Mountain Subalpine-Montane Riparian Woodland	<1	0	3	14	0	17
Total	2,662	398	184	1,527	245	5,016

It is important to note that the total values listed in Table 3-17 and Table 3-18 are based on the best available GIS data. Due to inaccuracies of underlying data, totals may not necessarily reflect the sum of the column or row.

In an effort to understand crossover between both datasets, spatial layers and attributes were overlaid and the summary of that exercise is displayed in Table 3-18. The acreage displayed in Table 3-18 is the acreage of the listed LANDFIRE riparian vegetation type that is also included in the NWI and National Hydrography Dataset data for the associated NWI and National Hydrography Dataset wetland type listed in the first column of the summary table.

Table 3-18. LANDFIRE Riparian Vegetation Overlap with National Wetlands Inventory/National Hydrography Dataset Data

NW/ National Hydrography Dataset Wetland Type	LANDFIRE Riparian Vegetation Cover	Acres					Grand Total
		BLM	Private	State	USDA Forest Service	USDA Forest Service Wilderness Area	
Not in NWI	Interior West Ruder al Riparian Forest	250	26	13	0	0	289
	Interior West Ruder al Riparian Scrub	570	58	52	33	4	717
	Rocky Mountain Lower Montane-Foothill Riparian Shrubland	45	10	5	180	16	256
	Rocky Mountain Lower Montane-Foothill Riparian Woodland	1,103	245	79	1,072	189	2,688
	Rocky Mountain Subalpine-Montane Riparian Shrubland	0	0	0	14	0	14
	Rocky Mountain Subalpine-Montane Riparian Woodland	0	0	0	12	0	12
	Totals per wetland type	1,968	338	149	1,312	208	3,975
Freshwater Emergent Wetland	Acres of Freshwater Emergent wetland type that do not cross over with LANDFIRE data layer	45	4	12	28	20	109
	Interior West Ruder al Riparian Forest	3	0	0	0	0	3
	Interior West Ruder al Riparian Scrub	3	0	0	0	0	3
	Rocky Mountain Lower Montane-Foothill Riparian Shrubland	1	0	0	2	0	3
	Rocky Mountain Lower Montane-Foothill Riparian Woodland	21	0	2	11	0	34
	Rocky Mountain Subalpine-Montane Riparian Shrubland	0	0	0	0	0	0
	Totals per wetland type	73	4	14	41	20	152
Freshwater Forested/Shrub Wetland	Acres of Freshwater Forested/Shrub Wetland type that do not cross over with LANDFIRE data layer	300	16	18	6	4	344
	Interior West Ruder al Riparian Forest	144	3	1	0	0	148
	Interior West Ruder al Riparian Scrub	163	1	5	0	0	169
	Rocky Mountain Lower Montane-Foothill Riparian Shrubland	1	3	0	0	0	4
	Rocky Mountain Lower Montane-Foothill Riparian Woodland	91	13	1	0	0	105
	Rocky Mountain Subalpine-Montane Riparian Shrubland	2	0	0	0	0	2
	Totals per wetland type	700	36	26	6	4	772

NWJ/ National Hydrography Dataset Wetland Type	LANDFIRE Riparian Vegetation Cover	Acres					Grand Total
		BLM	Private	State	USDA Forest Service	USDA Forest Service Wilderness Area	
Freshwater Pond	Acres of Freshwater Pond Wetland Type that do not cross over with LANDFIRE data layer	76	3	7	39	0	125
	Interior West Ruderal Riparian Forest	0	0	0	0	0	0
	Interior West Ruderal Riparian Scrub	3	0	1	0	0	4
	Rocky Mountain Lower Montane-Foothill Riparian Shrubland	0	0	0	1	0	1
	Rocky Mountain Lower Montane-Foothill Riparian Woodland	2	1	0	5	0	8
	Rocky Mountain Subalpine-Montane Riparian Shrubland	0	0	0	2	0	2
	Totals per wetland type	82	3	9	47	0	141
Lake	Acres of Lake Wetland Type that do not cross over with LANDFIRE data layer	0	33	0	0	0	33
	Interior West Ruderal Riparian Forest	0	1	0	0	0	1
	Interior West Ruderal Riparian Scrub	0	1	0	0	0	1
	Rocky Mountain Lower Montane-Foothill Riparian Shrubland	0	0	0	0	0	0
	Rocky Mountain Lower Montane-Foothill Riparian Woodland	0	2	0	0	0	2
	Totals per wetland type	0	37	0	0	0	37
Riverine	Acres of Riverine Wetland Type that do not cross over with LANDFIRE data layer	10,790	176	1,112	2,314	622	15,014
	Interior West Ruderal Riparian Forest	35	2	1	0	0	38
	Interior West Ruderal Riparian Scrub	86	7	8	5	1	107
	Rocky Mountain Lower Montane-Foothill Riparian Shrubland	8	1	1	26	2	38
	Rocky Mountain Lower Montane-Foothill Riparian Woodland	131	24	11	158	33	357
	Rocky Mountain Subalpine-Montane Riparian Shrubland	0	0	0	2	0	2
	Rocky Mountain Subalpine-Montane Riparian Woodland	0	0	2	2	0	4
	Totals per wetland type	11,050	211	1,136	2,507	658	15,562
Grand Total	13,873	629	1,333	3,914	891	20,641	

PROPER FUNCTIONING CONDITION ASSESSMENT

To evaluate the foundation and function of riparian and wetland ecosystems, the BLM has developed the proper functioning condition (PFC) assessment methodology for lotic and lentic areas. This tool seeks to understand the qualitative functionality of the physical processes in riparian-wetland areas and study interactions of hydrology, stabilizing vegetation, and geomorphology (soils and landforms) (BLM 2015, 2020).

Based on an assessment of 20 attributes, lentic riparian-wetland habitats are placed into one of three categories (BLM 2020):

- **PFC:** A lentic riparian-wetland area is considered to be in PFC, or functioning properly, when adequate vegetation, soil and landform, or woody material is present to:
 - Dissipate energies associated with overland flows (e.g., storm and snowmelt events) and wind and wave action, thereby reducing erosion.
 - Protect/stabilize shorelines, islands, and soil surfaces from erosion and direct physical alteration from human and animal activities.
 - Improve floodwater retention as well as ponding, storage, and retention of surface water.
 - Saturate soil and retain soil moisture.
 - Maintain or improve groundwater recharge.
 - Capture sediment.
 - Maintain soil attributes (e.g., organic matter, pore space, structure, soil chemistry).
- **Functional–at risk (FAR):** These riparian-wetland areas are in limited functioning condition; however, one or more existing hydrologic, vegetative, or soil/geomorphic attributes make them susceptible to impairment.
- **Nonfunctional (NF):** These riparian-wetland areas clearly are not providing adequate vegetation, soil and landform, or woody material to dissipate energies associated with overland flows and wind and wave action, and thus are not reducing erosion, improving water quality, protecting soil surfaces, stabilizing the site from physical alterations, and otherwise supporting PFC.

Based on an assessment of 17 attributes, lotic riparian-wetland habitats are placed into one of three categories (BLM 2015):

- **PFC:** A lotic riparian area is considered to be in PFC, or “functioning properly,” when adequate vegetation, landform, or woody material is present to:
 - Dissipate stream energy associated with high waterflow, thereby reducing erosion and improving water quality.
 - Capture sediment and aid floodplain development.
 - Improve floodwater retention and ground-water recharge.
 - Develop root masses that stabilize streambanks against erosion.
 - Maintain channel characteristics.
- **Functional–at risk (FAR):** These riparian areas are in limited functioning condition; however, existing hydrologic, vegetative, or geomorphic attributes make them susceptible to impairment.
- **Nonfunctional (NF):** These riparian areas clearly are not providing adequate vegetation, landform, or woody material to dissipate stream energy associated with moderately high flows, and thus are not reducing erosion, improving water quality, etc.

Management described in the following Environmental Consequences section refers to this PFC assessment. For more information, see Impacts Common to All Alternatives.

FLOODPLAINS

A floodplain is defined as a low-lying area adjoining a river or body of water that is subject to periodic flooding. Floodplains provide risk reduction benefits such as storing floodwater and slowing runoff as well as environmental value such as erosion control, groundwater recharge, and fish and wildlife habitat protection (Federal Emergency Management Agency [FEMA] 2020a). A 100-year floodplain, or Special Flood Hazard Area (SFHA), is defined as an area with at least a 1% probability of flooding in a given year, and a 500-year floodplain is an area with at least a 0.2% probability of flooding in a given year (FEMA 2020b).

Compliance with EO 11988, Floodplain Management, requires a project development evaluation to ensure that federal agencies “avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and . . . avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” The stipulations to this RMP/EIS and, subsequently, a master leasing plan, under EO 11988 are confined by the extent to which floodplains have been modeled and mapped by the FEMA National Flood Insurance Program. Currently, no portion of the Planning Area has been analyzed through hydrologic and hydraulic modeling to establish an SFHA pursuant to the definition defined by the FEMA National Flood Insurance Program. This does not exempt the Planning Area from FEMA SFHA regulations because any region of interest to federal agencies associated with the occupancy or modification of a floodplain must conduct modeling to determine a hazard.

3.4.3.1.2. Groundwater

Groundwater is the source of water for streams, springs, and seeps that support riparian resources and wildlife habitat. Groundwater is extracted from relatively shallow wells for livestock use and for public drinking water within the Planning Area as well as public drinking water and municipal uses in communities adjacent to the Planning Area. Surface water and groundwater resources are interconnected. Changes to groundwater conditions, such as water quality, depth, or static water levels, can affect surface water resources over time. Groundwater recharges through the infiltration of snowmelt, rainwater, and stream flow through soils, bedrock fractures, and permeable bedrock at the surface. Given this, groundwater can be affected by surface water conditions and climatic variations.

Shallow groundwater resources are found in unconsolidated rock alluvial aquifers in valley bottoms, especially along Comb Wash, Butler Wash, Indian Creek, and the San Juan River. Alluvial aquifers are generally characterized by high transmissivities, high storage coefficients (up to 20%), shallow waters, and seasonal fluctuation of depth to water.

Water in deeper regional aquifers often occurs within fractures, or within the pore-space of sedimentary rock units. Bedrock aquifers in the Planning Area, listed by age, include the D Aquifer (Burro Canyon Formation and the Dakota Sandstone), the M Aquifer (sandstone members of the Morrison Formation), the N Aquifer (Glen Canyon Group, including the Navajo Sandstone), the P Aquifer (the Cedar Mesa Sandstone, portions of the Rico Formation, and the upper section of the Honaker Trail Formation) and the Redwall Limestone Aquifer. The Redwall Limestone Aquifer occurs throughout most of the Planning Area but is deep with limited hydraulic conductivity and poor water quality. It is not the source of water for springs or water wells within or adjacent to the Planning Area.

The D Aquifer consists of the Burro Canyon Formation and the Dakota Sandstone and occurs in the far eastern portion of the Planning Area, providing water for several small springs. The aquifer extends east of the Planning Area and provides water for springs and water wells east of the Planning Area. Thickness ranges from 150 to 400 feet thick, and water quality ranges from fresh to moderately saline. The aquifer is relatively shallow, with water wells producing up to 36 gallons per minute (gpm) adjacent to the Planning Area.

The M Aquifer consists of the Bluff Sandstone and several members of the Morrison Formation and occurs east of Butler Wash in the Planning Area. Thickness ranges from 150 feet to the north to 400 feet to the south. This water-bearing unit is relatively shallow and has low hydraulic conductivity rates with water well pumping rates ranging from 6 to 10 gpm. The aquifer is the source of water for springs and wells in the eastern and southeast portions of the Planning Area and to the south and east of the Planning Area.

The N Aquifer within the Planning Area consists of the Kayenta Formation and the Navajo Sandstone and ranges between 750 and 1250 feet in thickness and is relatively shallow. Although water from this aquifer is not a main source for springs or water wells within the Planning Area, it is an important regional aquifer that provides abundant good quality water for several communities adjacent to the Planning Area. "The N Aquifer is the main source of domestic and livestock water in San Juan County" (Utah Division of Natural Resources 1995).

The P Aquifer within the Planning Area consists of permeable beds in Cedar Mesa Sandstone (Cedar Mesa area), the Rico Formation (Lime Creek area), and portions of the Honaker Trail Formation (near Mexican Hat), often at the surface or very shallow depths. The aquifer can be up to 1,200 feet thick in the Planning Area, with water wells averaging 600 to 800 feet deep with average pumping rates of 2 to 6 gpm. Water from the Cedar Mesa Sandstone often has very good water quality and is the source for most springs and water wells in the western two thirds of the Planning Area, including three water wells that provide public drinking water (NBNM and Grand Gulch Ranger Station) and at least 50 water wells for livestock use. Water from the Rico Formation is the source of many springs in the Lime Creek Watershed, usually with moderately saline water quality and low flow rates, which vary seasonally.

Recharge Area

The main recharge areas for the D, M, and Redwall Limestone Aquifers are outside the Planning Area and are recharged by infiltration of precipitation in higher elevations (i.e., above 8,000 feet) on the east side of the Abajo Mountains and to the northeast of the Planning Area. The main recharge areas for the N and P Aquifers are within the Planning Area and include higher elevations of the Abajo Mountains and Dark Canyon Plateau. Precipitation infiltrates into the aquifer bedrock units near the surface through soils, wash bottoms, and bedrock fractures. Recharge also occurs at lower elevations where the aquifer bedrock units are exposed at the surface, especially on and west of Cedar Mesa, through fractured rock and wash bottoms. Comb Ridge has been identified as an important recharge area for the N Aquifer.

The main recharge areas for the unconsolidated rock aquifers are the watersheds upstream of the aquifer areas. For example, the unconsolidated rock aquifer in Butler Wash is recharged by precipitation and stream flows from snow melt and floods in the Butler Wash Watershed. There may be groundwater seepage from bedrock aquifers into the unconsolidated rock aquifers as well.

Springs

Springs are an important resource in the Planning Area because they support critical biological ecosystems, especially considering the semiarid climate of BENM. Although spring inventory work is ongoing, a comprehensive spring inventory and baseline data collection effort is needed in the Planning Area, especially in the Cedar Mesa area on BLM-administered lands, because the current inventory is incomplete with minimal baseline data and condition assessments. Having a comprehensive inventory and current condition assessments would support preservation and restoration actions at high priority sites. Spring systems can be affected by livestock, wildlife, or human uses, which can impact water quality conditions or flows. Preservation through sound management practices ensures intact ecosystems and high-functioning environmental services.

Springs are also important as identified in the 2022 BEITC LMP: “Prayers and offerings are regularly made at springs and shrines along a given travel route. Therefore, trails, trail markers, springs, and shrines all constitute a sacred geographical complex associated with travel.” Additionally, water from springs in BENM is used for religious and ceremonial purposes. The studies conducted by Springs Stewardship Institute (SSI) and the EPA, in partnership with the Ute Mountain Ute Tribe, referenced in the following paragraphs, seek to determine water quality at springs within the Planning Area to determine the health of immediate habitats for diverse vegetation and aquatic species.

Recently, SSI, a 501(c)3 nonprofit organization dedicated to advancing the understanding and stewardship of springs ecosystems, conducted a field inventory of 66 springs on land managed by the USDA Forest Service. SSI gathered springs data from agencies, universities, researchers, nongovernmental organizations, and knowledgeable members of the public prior to field-verifying the collected data in mid-September 2021 (SSI 2022).

Springs inventories were verified along Level I and Level II protocols. Level I springs are field-verified through photographic and georeferenced evidence of criteria supporting the classification that the region is a spring. Level I protocol applies to springs and other temporally dependent variables in field verifications. Level II protocol dictates a more robust studies of springs, including the geomorphology, measurement of water quantity and quality, and the delineation of habitat dependent upon the water resources. Springs verified by Level II protocol are controlled through quality assurance procedures.

UDWQ operates and maintains several monitoring wells on BLM-administered land to monitor contamination from the White Mesa Mill. The EPA, in coordination with the Ute Mountain Ute Tribe, conducts detailed monitoring of certain water wells and nearby springs. As summarized in the *White Mesa Uranium Mill 2022 Annual Seeps and Springs Sampling Report*, no evidence has been found that the mill is influencing the water produced by the seeps and springs sampled based on comparison to on-site monitoring wells and historical spring data (Energy Fuels Resources (USA) Inc. 2023). For additional information related to the spring monitoring, visit the UDWQ website to view the most recent and all historical Annual Seeps and Springs sampling results reports.

Public Drinking Water Sources

NATURAL BRIDGES NATIONAL MONUMENT GROUNDWATER PROTECTION ZONE

A formal water rights agreement between the State of Utah and the United States was signed in 2010 to address federal reserved water rights in NBNM, including springs, seeps, and other surface water resources. To fulfill the purposes for which the NBNM was established and subject to the terms and conditions of the agreement, the United States has a federal reserved right to all

naturally occurring water underlying, originating within, or flowing through NBNM (which includes intermittent and ephemeral streams, springs, seeps, groundwater and other natural sources of water).

As part of the settlement agreement, limits were placed on new appropriations for surface and groundwater developments within certain subbasins (Armstrong Canyon, Burch Canyon, Deer Canyon, White Canyon) and the newly delineated GPZ. New surface water and groundwater diversions within the named subbasins are limited in annual production and reservoir storage capacities per subbasin. The GPZ applies to surface water and groundwater developments surrounding NBNM on BLM-administered lands. The maximum individual well allowable diversion rate is 0.015 cubic feet per second; or, the maximum individual diversion per legal section is 10 acre-feet per year; or, the maximum combined diversion from all existing and new wells is no more than 10 acre-feet per year per legal section.

WATER WELLS

There are four wells that provide public drinking water within the Planning Area: two wells in NBNM producing from the Cedar Mesa Sandstone, one well at Kane Gulch Ranger Station producing from the Cedar Mesa Sandstone, and one well at Sand Island Ranger Station producing from the Navajo Sandstone. Each of these wells is permitted through the State of Utah Division of Drinking Water (UDDW) and has an approved public drinking water source protection plan with delineated public DWSP zones. Certain activities are restricted in each protection zone to protect water quality. Each of these wells uses groundwater that is recharged within the Planning Area.

A drinking water source protection plan was created in 2000 for three wells located in the NBNM, which is surrounded by the Planning Area (Martin 2000). All three wells are located in the Cedar Mesa Sandstone at between 500 and 750 feet below ground surface. These wells are used for drinking water and restroom facilities, and water use ranges from 700,000 to 800,000 gallons per year (Martin 2000).

In 1997, a preliminary evaluation report was written for the Kane Gulch well. This well and associated water system is classified as a transient/non-community water system (BLM-Moab FO 1997). This well was drilled into the Cedar Mesa Sandstone and water was encountered at approximately 600 feet below ground surface (BLM-Moab FO 1997). The preliminary evaluation report was written to support the BLM in seeking protected aquifer classification (BLM-Moab FO 1997). Travel velocity was determined to be 0.007 foot per day with the total travel distance of 2 feet over a period of 250 days (BLM-Moab FO 1997).

The Sand Island Ranger Station public drinking water well is located within the Planning Area, 4 miles west of Bluff, and is a transient/non-community water system (BLM 2010). This drinking water well was drilled into the Navajo Sandstone and is recharged by areas in the Planning Area.

Drinking Water Sources for Communities near Bears Ears National Monument

There are a number of communities that receive drinking water from protected zones just outside the Planning Area boundary that have a direct connection to aquifers underlying the Planning Area. The following communities near BENM rely on drinking water sources that are recharged by areas within the Planning Area:

- Bluff: Drinking water for Bluff comes from wells drilled in the N Aquifer, specifically the Navajo Sandstone, which is recharged by areas within the Planning Area, including Comb Ridge, Cottonwood Wash, and the Abajo Mountains.

- **Blanding:** The sources of drinking water for Blanding include both surface and groundwater resources. Groundwater is extracted from the M and D Aquifers, which may be partially recharged within the Planning Area. Surface water sources include Recapture Reservoir and Indian Creek. The Blanding Municipal Watershed lies partially within the Planning Area.
- **Monticello:** The sources of drinking water for Monticello include both surface and groundwater resources. Surface water sources are located outside of the Planning Area. Groundwater sources may be recharged within the Planning Area. There are wells with associated DWSP zones that are recharged by areas inside BENM, including the Abajo Mountains and elevations above 8,000 feet. Public drinking water surface water sources for the City of Monticello are Lloyds Lake and other reservoirs.
- **White Mesa/Ute Mountain Ute Tribe:** The community of White Mesa and the Ute Mountain Ute Tribe obtain drinking water from a well just outside of BENM that is drilled in the Navajo Sandstone. The recharge areas for this well are in BENM and consist of Comb Ridge, the Abajo Mountains, and Cottonwood Wash. The Ute Mountain Ute Tribe has filed a petition to the EPA for sole source aquifer designation to protect their drinking water aquifer (N Aquifer, specifically the Navajo Sandstone) and its recharge areas. This petition is still in draft and includes a map showing a portion of the sole source aquifer area and the recharge area located within the Planning Area. A sole source aquifer designation is applied to an aquifer that is not protected from surface influences by a confining layer and is the only source of water available to a community. UDWQ operates and maintains several monitoring wells on BLM-administered lands to monitor contamination from the White Mesa Mill.
- **Mexican Hat:** Mexican Hat's public drinking water source comes from groundwater in wells drilled into the P Aquifer. This aquifer receives recharge from areas in BENM that are above 8,000 feet in elevation.

Livestock Water Wells

Water wells are an important source of water for livestock use during the grazing season and for public drinking water in the Planning Area. Most wells are producing water from the P Aquifer, specifically from the Cedar Mesa Sandstone. Wells average 600 to 800 feet in depth, with Cedar Mesa Sandstone outcropping at the surface. Pumping rates range from 3 to 10 gpm, producing from one or more intervals in each well. The most productive zone in the Cedar Mesa appears to be near the base of the formation, with several less-productive units at approximately 100- and 500-foot depths.

There are at least 56 water wells that are used to support livestock grazing in the Planning Area, mainly in the Cedar Mesa area or the western portion of the Planning Area. Currently there are 13 wells on BLM-administered lands (23%), 36 wells on Utah Trust Lands (64%), and seven wells on private lands (13%). Of these wells, 38 have been drilled in the last 5 years (64%). Of the 38 wells drilled in the last 5 years, 30 are located on Utah Trust Lands (79%), with the other eight wells located on BLM-administered lands (21%). There are proposals to drill another 18 wells on BLM-administered lands within the Planning Area. These wells are all sourced in the Cedar Mesa Sandstone and are only pumped while grazing is active, usually during the fall, winter, and spring seasons. Currently there is no comprehensive groundwater study, budget, or water well monitoring program related to water wells and groundwater withdrawals in the Cedar Mesa Sandstone Aquifer. A spring monitoring program has been initiated related to the proposed wells on BLM-administered lands.

3.4.3.1.3. Water Quantity

Water Rights and Groundwater Quantity

The right to use water resources in the western United States, including the Planning Area, generally falls under the jurisdiction of the state issuing the water right. States have primary authority and responsibility for the allocation and management of water resources within their borders except as otherwise specified by Congress. The BLM cooperates with state and Tribal governments and complies with applicable state laws to the extent consistent with federal law to acquire, perfect, protect, and manage water rights to ensure the availability of water for public land management purposes. There are many water sources that are used for grazing purposes that do not have water right applications filed as of this date. This is an ongoing long-term project. The number of existing water rights is not reflective of actual water uses. For the Planning Area, water rights for the appropriation and use of both groundwater and surface water are assigned and administered by the State of Utah. Within the Planning Areas, there are 53 active water rights that the State of Utah has approved and administers.

Within the Monument, five diligence claims or federal reserved rights have been filed by the BLM on BLM-administered lands and nine diligence claims have been filed by the USDA Forest Service on NFS lands to date. There are many sites within the Monument that would qualify as having federal reserve rights that have not been filed on yet, and the BLM will pursue future negotiations, settlements, and recognition for all federally reserved water rights as appropriate. Federally reserved water rights are based on the reservation of lands by Congressional Act or a Presidential Proclamation, and they reserve a quantity of water necessary to implement the specifically stated primary purposes of the reservation. The water right is not limited to types of water uses and water rights allowed under state law, and the priority date of the water right is the date of the Congressional Act or Presidential Proclamation. Federally reserved water rights for BENM are extremely important, because under the federally reserved water rights doctrine, the federal government can claim water rights for uses that are not recognized under state law, such as water rights for ceremonial, cultural, and historical interpretation uses.

Current management for the USDA Forest Service (Water Uses Management (F07) [III 33-04]) prohibits new or expansion of existing spring or other water source development and related facilities when loss of water results in unacceptable impacts to riparian areas, vegetation, fisheries, or other USDA Forest Service resources and uses (USDA Forest Service 1986).

Public water reserves (PWRs) are federal reserved water rights created by EOs that are designed to reserve natural springs and waterholes on public lands for general public use. A PWR designation is both a federally reserved water right and a land withdrawal. To date, many PWRs have not been registered with the State of Utah and/or are not adjudicated. There are 96 PWRs within the Planning Area.

Climate Change

Climatic conditions in the Colorado Plateau region are expected to undergo general warming over the entire region, with an increase as much as 3.8 degrees Fahrenheit (°F) (2 degrees Celsius [°C]) by 2060 in some locations. Average summer temperatures are expected to increase, but even greater increases are predicted for the winter months. Precipitation is expected to decline throughout much of the year during the 2015 to 2030 period (with the exception of certain months in the fall), with severe drought conditions likely to occur in some areas (Bryce et al. 2012).

Climate change analysis indicates that maximum and minimum daily temperatures have been rising since the 1960s and are predicted to continue rising by as much as 10° F (12.22° C) through the year 2100. For the past 50 years, hydrologic regimes of the western United States have trended toward earlier snowmelt runoff, reduced water yield, lower summer flows, and increased or altered flood risk (USGS 2005; Wenger et al. 2010). These alterations will modify snowpack residence time, the timing and volume of peak flows, center of flow mass, summer low flow volumes, and the amount of water available for use (Cummins 2016).

The IPCC's *Climate Change 2014: Impacts, Adaptation, and Vulnerability* determined that climate change impacts to water supply include decreased water availability and stress on ecosystems as a result (Romero-Lankao et al. 2014).

Average precipitation in the Planning Area is variable based on elevation. There are 18 BLM rain gauges in the Planning Area located across a range of elevations: from the Lake Canyon Rain Gauge at 5,300 feet above sea level to the Dark Canyon Plateau Rain Gauge at 7,500 feet above sea level. Average annual precipitation rates are between 7 and 33 inches per year (Appendix A, Figure 3-42, Average annual precipitation based on 30-year climate normals), with areas closer to Lake Powell, Lockhart Basin, and Indian Creek receiving closer to 7 inches and higher-elevation regions, such as Deer Flat and Dark Canyon Plateau, receiving 14 to 16 inches per year on BLM-administered lands (Northwest Alliance for Computational Science and Engineering 2022). Additionally, recent research shows has shown that since 2000, the southwestern region of North America has been experiencing the driest megadrought in the region in the last 1,200 years (NOAA and NIDIS 2023).

As identified in the 2022 BEITC LMP, “it is crucial to discuss climate change and its effects on the environment. [The] Hopi people believe that climate change is caused by the cumulative effect of human misuse and neglect of the environment, and land management practices, both within BENM and beyond, thus directly relate to climate.”

3.4.3.2. ENVIRONMENTAL CONSEQUENCES

3.4.3.2.1. Issues

- How would BENM management affect surface water hydrology, water quality, water quantity, and riparian and wetland areas?
- How would BENM management affect groundwater quality and quantity, groundwater-dependent ecosystems, public DWSP zones, GPZs, or associated surface water resources?

3.4.3.2.2. Impacts Common to All Alternatives

Under all alternatives, agencies would conduct comprehensive monitoring to track water quality conditions across the Monument and would collaborate with the BEC to develop a groundwater/surface water technical study and monitoring plan, including, but not limited to, studies related to pumping impacts, water well production rates, water levels in water wells, and triggers for adaptive management, if needed, to protect BENM objects. Additionally, under all alternatives, the agencies would conduct a groundwater study on the Cedar Mesa Sandstone and N Aquifers to better understand characteristics, current conditions, recharge areas, recharge rates, groundwater budget (inflow vs. outflow), travel time, and springs.

Actions that could impact water resources include ground-disturbing activities associated with ROWs and resource uses such as recreation (camping, hiking, and OHV use), special land use designations (ACECs and WSRs), livestock grazing, and vegetation and forest management.

Management of Riparian Areas, Floodplains, and Surface Water

Management of riparian areas and floodplains is essential to protecting water resources within the Planning Area. Natural floodplains and functioning riparian zones provide several benefits to water quality and the overall aquatic ecosystems, including erosion control, surface water quality management, and groundwater recharge (FEMA 2020a). Naturally occurring floodplains slow the rate of water runoff and allow time for the runoff to infiltrate into the ground. This reduces streambank erosion and contributes to shallow groundwater recharge (FEMA 2020a). Riparian areas also provide water flow control, capture sediment and nutrients, and provide a hydrologic connection between the upland zone and the aquatic zone (Utah State University 2020). Surface-disturbing activities in floodplains and riparian areas disrupt the natural protection that these zones offer to existing water quality and hydrology within the Planning Area.

Impacts from Surface-Disturbing Activities

Surface-disturbing activities include digging, trenching, and other activities that disturb soil resources past the natural erosive process. See the Glossary for the full definition of surface disturbance. Decreased vegetation cover and soil compaction can reduce water infiltration, leading to an increase in surface water runoff, soil erosion, and sedimentation of adjacent waterways. Surface-disturbing activities can change the physical characteristics of streams and other surface waterbodies through direct disturbance of stream channels or by increasing runoff from the surrounding watershed. These changes contribute to streambank erosion, increased turbidity, and degradation of water quality, potentially leading to new surface water impairments or inhibiting resolution of existing impairments.

Soil and Vegetation Management

Invasive nonnative plants threaten water quality throughout BENM because over time, invasive plants can crowd out native riparian plants and significantly decrease the diversity of riparian cover (USDA 2022). Some nonnative invasive plants, such as Russian olive (*Elaeagnus angustifolia*) or tamarisk, favor riparian areas where the soil is moist and are a threat to riparian areas. Other types of nonnative invasive species also dominate upland habitats and threaten native vegetation within watersheds.

Invasive plants such as Russian olive or tamarisk spread quickly through seeds that are transported by animals, wind, and water (USDA 2017). Invasive species can cause changes in channel geometry and the resulting channel erosion. Additionally, nonnative species often impact water volumes due to differences in water demand. Under all alternatives, vegetation types would be managed to support healthy watersheds. This includes managing vegetation to control the spread of invasive nonnative plants and collaborating with the BEC to plan vegetation treatments in the appropriate season.

Forestry and Woodlands

The goals of forestry and woodlands management across the Planning Area are to promote continued health, diversity, and resiliency of forest structural stages, including old growth. Under all alternatives, lands in the Planning Area would be designated as not suited for timber production.

Wood product harvest has the potential to impact water resources mainly if located in riparian areas. Wood products contribute to aquatic ecosystems by providing soil and bank stability, filtering sediment from runoff, and providing shade and habitat for aquatic organisms. Potential for streambank alteration and loss of aquatic habitat could occur if wood products are removed.

COTTONWOOD AND WILLOW HARVESTING

Cottonwoods and willows (*Salix* spp.) are the most widespread native riparian vegetation in the Southwest and support watershed protection because of their ability to reduce erosion, stabilize streambanks, and provide shade that helps to stabilize stream temperatures (Hultine et al. 2010). In arid regions of the western United States, it has been shown that cottonwood declines along alluvial reaches of large rivers contribute to modified flow regimes, lack of suitable substrate, insufficient seed rain, and increased interspecific competition (Cooper et al. 1999). It has also been shown that canopy dieback is correlated with declines in leaf transpiration, so protecting the canopy stability by limiting harvest protects the stability of these critical riparian plant species (Hultine et al. 2010).

To conserve the health of willow strands, no more than one-third of branches should be taken from any single willow (Lezberg and Giordanengo 2008). Overharvesting of cottonwoods or willows that would result in die-off has potential to impact streambank stability, sediment loading, and stream temperature. Restrictions on cottonwood and willow harvesting across the Monument would decrease the potential for localized impacts to water resources and PFC. Willow cuttings and plantings for restoration purposes would be considered vegetation treatments and would be covered under management of riparian areas.

Recreation, Transportation, and Special Designations

Under all alternatives, recreation across the Planning Area includes such activities as camping, OHV use, backpacking, and hiking. Recreation could cause localized impacts and over time could potentially increase localized erosion and disturbance in riparian areas. Additionally, recreation activities can be focused in riparian areas because of aesthetics and the presence of water. As recreation increases in popularity throughout the Planning Area, ground disturbance from recreation activities could potentially increase and impact waterbodies through indirect sediment loading and pollution to streams from improper camping and hiking practices.

Moreover, the use of OHVs on public lands could result in increased impacts to water resources and riparian areas. Without adherence to existing and established routes, OHV use could also lead to vegetation and soil disturbance in riparian areas and on streambanks. Under all alternatives, there are no designated OHV open areas; OHV travel is limited to designated OHV limited areas where travel is restricted to designated routes. OHV limited areas would likely have minimal impacts to water resources due to previous disturbance, and closing areas to OHV use would eliminate impacts from OHVs to water in closed areas. As described in Section 3.4.3.1, there is potential for water quality pollution as a result of vehicular crossings and increased erosion and streambank modification from OHV use.

Under all alternatives, various types of recreation would occur throughout the Monument, which could impact water resources and riparian areas. The management of recreation areas indirectly impacts water sources by concentrating, maintaining, or limiting recreation uses such as camping, campfires, pets, and human or other waste. See Section 3.5.7 for more information on recreation area management focuses. The management of recreation areas indirectly impacts water resources by closing or opening certain areas to surface-disturbing activities such as camping, campfires, pets, and human and other waste. These specific activities have the potential to contribute sediment and pollutants to waterbodies within the Monument and impact riparian areas from disturbance. See Appendix I for a full summary of all HUC 12 watersheds and acreage of recreation management designations.

Additionally, a springs study conducted by SSI in 2021 on NFS lands within the Planning Area found that spring flow in the Monument is low, with the average discharge of springs surveyed being less than 0.1 liter per second and the highest discharge being approximately 0.25 liter per second (SSI 2022). This study also showed anthropogenic impacts to springs within the Planning Area due to flow regulation, roads and trails, fencing, construction, livestock herbivory, recreation, adjacent landscape conditions, and fire (SSI 2022).

Rights-of-Way

Under all alternatives, managing areas as ROW avoidance areas and exclusion areas would reduce (avoidance) or eliminate (exclusion) impacts to water resources. Development of ROW projects has the potential to impact water resources by increased erosion from new roads and ground disturbance, altered hydrologic conditions, and reduced vegetation cover. Additionally, the construction of facilities and the use of motorized vehicles during construction could lead to pollution from vehicle crossings and increase the potential for erosion. Specific impacts should be evaluated on a site-specific basis.

Livestock Grazing

Construction of range-improvement features, such as water developments, can result in localized surface disturbance as a result of the digging and earthmoving required to remove vegetation and construct features. Livestock grazing near waterways can cause water quality impacts, such as stream bacteria loading from animal manure, including *Cryptosporidium parvum*, *Shigella* sp., and virulent strains of *E. coli* (Hudson 2021), which can be a health concern because some water sources are used for drinking water in backcountry sites. Livestock grazing near waterbodies can cause increases in nutrient levels that affect aquatic habitats and water quality conditions and may interfere with meeting state water quality standards. Intensive livestock grazing is also associated with ecological degradation of springs by groundwater extraction and overuse (SSI 2022). Livestock grazing can result in increased stream temperatures when grazing occurs in the riparian zone because these areas provide important shade for streams. It can also contribute to the degradation of streambank stability and can increase sediment loading, TDS, and total suspended solids in streams. Limiting areas to only trailing has fewer impacts to water resources because time and duration of livestock use is more restricted. Livestock grazing could also impact soil erosion, streambank degradation, and sedimentation.

Riparian areas are critical water sources for both livestock and wildlife. Timing and intensity of livestock grazing in riparian areas has direct effects on degradation of stream channel morphology, riparian soils, reduced riparian and wetland functionality, and decreased biodiversity (Belsky et al. 1999). Upland water sources and range improvements can further distribute livestock across a landscape and reduce grazing pressure on wetlands and/or riparian areas.

Impacts from water developments related to livestock grazing would be evaluated at the implementation level on a case-by-case basis. If additional water developments occur throughout BENM, and precipitation declines as a result of warming temperatures, there is potential for decreased aquifer functionality, loss of springs, and diminished stream flows. Decreased groundwater levels and availability could affect springs and public drinking water sources both within and outside the Planning Area. Springs in the Planning Area provide ecosystem functions and determine much of the natural water flow through BENM. Groundwater resources are important sources of drinking water both within and outside the Planning Area.

A springs study conducted by SSI in 2021 on NFS lands within the Planning Area found that spring flow in the Monument is low, and that there are some impacts to springs within the Planning Area

due to livestock herbivory that alters the springs physical condition (SSI 2022). Livestock grazing is managed under all alternatives through a permitting system. For additional information on livestock grazing management throughout the Monument, see Section 3.5.9.

Impacts from Climate Change

Changes in climate play a role in water quality, especially regarding stream temperature (Poff et al. 2002; USGS 2005; Wenger 2010). The primary effects on water quality from altered flows as a result of climate change are harmful algal blooms, increased salinity, increased total suspended solids, increased TDS, decreased dissolved oxygen levels, increased nutrient levels, and increased water temperatures (EPA and USGS 2015). Stream temperatures are estimated to rise by 3.6 °F by 2060 (Bryce et al. 2012). Changes in stream flow can affect water quality conditions with increased concentrations of nutrients and lower levels of dissolved oxygen, which then affect aquatic habitats and can interfere with meeting state water quality standards.

Changes in climate are expected to impact groundwater recharge and, therefore, water quantity. With reduced precipitation, higher air temperatures and prolonged drought conditions there will be less water to infiltrate through soils and into the aquifers. This will affect flows at springs, spring-fed streams, and in water wells. Riparian and wetland areas are likely to decrease in quality and quantity due to increasing temperatures, decreasing precipitation; increases in prolonged droughts causing a reduction in groundwater availability; and increases in human activities. Additionally, riparian and wetland ecosystems are frequently used for human, wildlife, and livestock activities, particularly in the arid Southwest, where summer temperatures are often extremely high and drought conditions are prevalent.

An increase in the occurrence and size of heavy precipitation events has been observed within the United States and has been linked to climate change (Wright et al. 2019). There is evidence that both the size and frequency of these events will continue to increase per each degree of warming (Swain et al. 2020). Changes in the precipitation regime due to climate change can also impact recharge to groundwater resources and affect groundwater resources, including reduced volumes and reduced hydrostatic pressures. This in turn affects flows at springs, seeps, and spring-fed streams as well as affecting water levels and pumping rates in water wells. As precipitation shifts to larger, less frequent storm events, there is less chance for infiltration because stormwater runoff leaves the area quickly as opposed to snow melting over a longer period and allowing more infiltration to the aquifer. With more precipitation falling in summer months, there is a higher loss of water to evaporation and plant transpiration than in cooler seasons. The increase in frequency of heavy rainfall events could result in increased out-of-bank flooding and an expansion of 100- and 500-year floodplains. These heavy rainfall and flooding events could also remove vegetation within riparian areas and reduce the ability of riparian areas to withstand external influences and maintain stream channel morphology.

3.4.3.2.3. Impacts under Alternative A

Management of Riparian Areas, Floodplains, and Surface Water

Under Alternative A, water resources would be managed under existing management plans with the goal of meeting state water quality standards and following management recommendations from UDWQ TMDL reports. Agencies would manage riparian resources for PFC, which addresses the physical functioning of riparian systems and water quality and quantity.

Mitigation related to specific resource management would occur to reduce impacts to floodplains and riparian areas (BLM 2007, BLM Riparian Manual 1737).

Floodplains and riparian areas are protected under the existing 2020 ROD/MMPs, which do not allow new surface-disturbing activity within active floodplains or within 100 meters (approximately 330 feet) of riparian areas along perennial and intermittent springs and streams on BLM-administered and NFS lands. Exceptions to this guidance include the following: vegetation treatments that do not impair riparian function, activities related to development of recreational or range infrastructure that do not impair riparian function, activities that show all long-term impacts can be fully mitigated, activities that would benefit the riparian area, or activities that show there are no practical alternatives and that all long-term impacts can be fully mitigated. This management covers Monument lands defined in the 2020 ROD/MMPs, which is approximately 15% of the total new Monument acreage. Floodplain and riparian management outside of the 2020 ROD/MMPs boundary is managed to preclude surface-disturbing activities within 100-year floodplains and within 100 meters of riparian areas, public water reserves, and springs.

See Section 3.4.3.2.2 for details on floodplains and riparian areas as they relate to water quality and other water resources.

Also under Alternative A, prior to any project activities, riparian areas and/or wetlands must be mapped and evaluated so project-specific impacts can be analyzed and so mitigation measures can be developed and implemented as necessary to prevent degradation.

Groundwater Aquifers

Under Alternative A, for groundwater withdrawals, requirements for a hydrologic study would be determined at the implementation level based on groundwater levels and geological conditions. Agencies would not authorize land uses for water withdrawals that could affect groundwater for seeps and springs and would ensure that any authorized withdrawals would provide for the proper care and management of BENM objects. Management actions would comply with limitations on water developments as described in the water rights settlement for NBNM.

DRINKING WATER SOURCE PROTECTION ZONES

Under Alternative A, per the existing management, surface disturbance in DWSP zones should be avoided or limited. Surface disturbance in areas where water is used for drinking water threatens the quality of water by increasing the potential for contaminant loading. As mentioned in Section 3.4.3.2.2, all alternatives would adhere to UDDW restrictions on activities within public DWSP zones.

Within BENM, the types of potential contamination sources to drinking water systems consist of grazing, light-duty roads, and sewer lines (Utah Division of Drinking Water 2004).

Soil and Vegetation Management

Section 3.4.3.2.2 describes the impacts of ground-disturbing activities associated with management actions to water resources.

Under Alternative A, per existing management, for slopes greater than 40%, no discretionary uses would be allowed unless it is determined that other placement alternatives are not practicable, or when surface-disturbing activities (e.g., trail construction) are necessary to reduce or prevent soil erosion. In those cases, an erosion control plan would be required for review and approval by the BLM and USDA Forest Service prior to permitting the activity. Slope steepness impacts relative soil erodibility; the steeper the slope, the more erosion potential and potential subsequent sediment loading to waterways (USDA Forest Service 2017). Erosion control plans would ensure that

sediment transport would be addressed by controlling runoff where possible and stabilizing exposed soils using site-specific BMPs.

INVASIVE SPECIES MANAGEMENT

Under Alternative A, management would take action to reduce invasive plants, including tamarisk, Russian olive, and other woody invasive species, where appropriate, using allowable vegetation treatments. Treatment areas would be reseeded, when appropriate, to avoid erosion damage or the re-establishment of invasive species. Additionally, management action would take place to reduce herbaceous invasive species where appropriate. When invasive species are removed from riparian areas, space is provided for native vegetation to grow, and fluvial processes may be restored, which provides critical habitat for riparian ecosystems and reduces impacts as described in Section 3.4.3.2.2.

Forestry and Woodlands

Woodlands management is important to the health of water resources throughout the Monument because wood products contribute to aquatic ecosystems by providing soil and bank stability, filtering sediment from runoff, and providing shade and habitat for aquatic organisms. If forests and woodlands are removed, there is potential for streambank alteration and loss of aquatic habitat.

Under Alternative A, riparian and floodplain areas would be excluded from wood product use except for Indigenous peoples' traditional and ceremonial uses, as determined on a site-specific basis. Additionally, management would evaluate forest and wood product harvest impacts to vegetation cover and soil erosion. If there is indication that wood product harvest is causing increased soil erosion, agencies would alter the allowable harvest area or harvest season to protect specific resources uses. This could include areas where increased loading to streams or riparian areas may occur as a result of wood product harvest.

Under Alternative A, lands would be managed to provide for harvest of forest products when the activity would improve water production and/or does not adversely affect water quality.

COTTONWOOD AND WILLOW HARVESTING

Under Alternative A, cottonwood and willow harvest would be allowed for Indigenous people's traditional and ceremonial uses through an authorization system. Restrictions on this harvest would be implemented as necessary to achieve or maintain PFC.

Recreation, Transportation, and Special Designations

OFF-HIGHWAY VEHICLE USE

Under Alternative A, 68% of the Planning Area is designated OHV limited where travel is restricted to designated routes, and 32% of the Planning Area is designated OHV closed. As described in Section 3.4.3.2.2, there is potential for water quality pollution as a result of vehicular crossings and increased erosion and streambank modification from OHV use. The road in Arch Canyon would remain open to OHV use, which would continue to impact water resources and water quality conditions, including increased erosion and sediment loading from unstable streambanks at road crossings and from the sections of road located within the stream channel.

DISPERSED CAMPING

Under Alternative A, dispersed recreation is limited where a riparian area is being unacceptably damaged, and no camping within 200 feet of isolated springs or water sources is allowed. Camping within riparian areas functioning-at-risk is discouraged in the management under Alternative A. Increased human recreational activity within these ecosystems also typically occurs in the spring and fall seasons. Impacts from dispersed camping may include decreased water quality conditions due to increased nutrient levels and increases in harmful bacteria such as *E. coli* due to human waste disposal. High nutrient levels can affect dissolved oxygen levels; both conditions can impact aquatic habitats. Camping in riparian areas can reduce vegetation due to trampling, causing higher water temperatures due to loss of shade and soil moisture.

Rights-of-Way

Under Alternative A, approximately 13% of the Planning Area is ROW avoidance and 33% is ROW exclusion. Development of ROW projects has the potential to impact water resources by increased erosion from new roads and ground disturbance, altered hydrologic conditions, and reduced vegetation cover. Specific impacts should be evaluated on a site-specific basis.

Livestock Grazing

Under Alternative A, there is a total of 1,223,820 acres (approximately 90% of the total Planning Area) available for livestock grazing. Impacts to water resources from livestock use are highly variable and depend on both site characteristics and grazing practices.

Livestock is also managed under existing management plans to avoid trailing along riparian corridors except areas where trailing has already occurred or there is existing disturbance. If there is damage to the riparian areas, BMPs are to be implemented to help achieve riparian area goals.

See Appendix I for a full summary of all HUC 12 watersheds and acreages of livestock grazing management designations.

WATER DEVELOPMENT FOR LIVESTOCK USE

Under Alternative A, existing management is to develop off-site water sources where practicable to reduce impacts to riparian areas and surface water quality at seeps, springs, and streams. Under Alternative A, developing water sources where practical is allowed to benefit grazing distribution on identified allotments. Although off-site water sources do protect ecological function at the spring source and reduce direct impacts from trampling, often other natural ecosystems are impacted by reduced water availability, such as wet meadows around the springs, as well as reduced flows at the spring sites.

If additional water developments occur throughout BENM or precipitation declines as a result of warming temperatures, there is potential for decreased aquifer functionality, loss of springs, and diminished stream flows. Future trends for water resources within the Planning Area include less recharge to groundwater related to climate change and increased water use for drinking water and recreation. These trends would lead to reduced groundwater availability.

3.4.3.2.4. Impacts under Alternative B

Management of Riparian Areas, Floodplains, and Surface Water

Under Alternative B, no new discretionary actions that alter vegetative cover, result in stream channel instability or loss of channel cross-sectional areas, or reduce water quality would be allowed within the 100-year floodplain or within 300 feet of springs, riparian areas, and intermittent and perennial streams unless the action meets at least one of the following exceptions: 1) the activity is a vegetation treatment that does not impair overall riparian function in a system; 2) the activity is related to development of recreational or range infrastructure that does not impair riparian function; 3) it can be shown that all long-term impacts can be fully mitigated; 4) the action is designed for long-term benefits to riparian, wetland, or aquatic habitats (e.g., side channel restoration, process-based restoration); 5) it can be shown that there are no practical alternatives and the activity is consistent with the protection of BENM objects. This alternative has both more protective measures and fewer protective measures than Alternative A. Alternative A is more protective in that it does not allow new surface-disturbing activities within 100 meters (330 feet) of water resources, whereas Alternative B does not allow new surface-disturbing activity within 300 feet of water resources. Alternative B is slightly more protective than Alternative A because Alternative A makes exceptions for discretionary actions within riparian areas for actions with general benefits to riparian areas, whereas under Alternative B, exceptions are only made for actions that would have long-term benefits, and the definition is expanded to include wetlands and aquatic habitat.

Additionally, under Alternative B, riparian areas and/or wetlands that could be impacted would be required to be delineated and evaluated prior to implementation of discretionary actions. Discretionary actions would be designed to protect riparian areas, wetlands, and water resources. This is different from Alternative A because it considers impacts when actions are being designed, whereas management under Alternative A takes a more reactive approach of implementing mitigation measures as needed.

Groundwater Aquifers

Under Alternative B, for groundwater withdrawals, a hydrologic study is required for all groundwater withdrawals within 0.25 mile of a seep, spring, water well, PWR, or groundwater-dependent ecosystem. This requirement is more protective of groundwater depletion than Alternative A because Alternative B gives specific requirements of the hydrologic study, which is required to be conducted by an agency hydrologist or other qualified groundwater hydrologist to determine appropriate restrictions or limitations needed to protect existing water wells, to avoid compounding groundwater depletion and impacting groundwater recharge, and to protect spring flows and spring-fed stream flows. This management and requirement of a hydrologic study protects groundwater availability by requiring a detailed understanding of the groundwater conditions and potential impacts to groundwater withdrawal before authorizing a new withdrawal. Relative to Alternative A, such studies would improve the quality of implementation-level analysis and likely result in fewer impacts to groundwater aquifers.

DRINKING WATER SOURCE PROTECTION ZONES

Under Alternative B, agencies would manage discretionary uses to protect DWSP zones. This is different than Alternative A, which avoids or limits surface disturbance in DWSP zones. This higher level of protection would improve protection of drinking water sources relative to Alternative A.

Soil and Vegetation Management

Impacts to water resources from soil and vegetation management are as described in Section 3.4.3.2.2. Under Alternative B, if actions cannot be avoided on slopes between 21% and 40%, an erosion control plan is required that must be approved by the agencies prior to any site-specific construction. For slopes greater than 40%, no discretionary action would be allowed unless it is consistent with the protection of BENM objects. If maps indicate that discretionary actions are within areas with erosive soils, further restricting activities may be considered to assure control of soil erosion within acceptable levels. This protection of erosive soils is greater than under the management of Alternative A and would result in fewer impacts to water resources. See Section 3.4.2 for an expanded definition of erosive soils.

INVASIVE SPECIES MANAGEMENT

Under Alternative B, management would collaborate with the BEC and take action to reduce invasive plants, including tamarisk, Russian olive, and other woody and herbaceous invasive species where appropriate. Treatment areas would be reseeded using native plants to avoid erosion damage or the re-establishment of invasive species. Additionally, management action would take place to reduce herbaceous invasive species where appropriate. This is more robust than invasive management under Alternative A, which implements a cap of 5,000 acres that would be treated over the life span of the current management plan and does not specify reseeding with native plants. This robust management would result in fewer impacts to water resources under this alternative relative to Alternative A. See Section 3.4.3.2.2 for a description of invasive species impacts to water resources.

Forestry and Woodlands

Under Alternative B, riparian and floodplain areas would be excluded from wood product use except for Indigenous peoples' traditional or ceremonial uses as determined on a site-specific basis and in collaboration with the BEC. Additionally, management would evaluate forest and wood product harvest impacts to vegetation cover and soil erosion. If there is indication that wood product harvest is causing increased soil erosion or significant changes to plant community composition, structure, or function, agencies would alter the allowable harvest area or harvest season in collaboration with the BEC to protect specific resources uses. This could include areas where increased sediment loading to streams or riparian areas may occur as a result of wood product harvest.

This management of forest harvesting is very similar to management under Alternative A, with the main difference being collaboration with the BEC. This additional collaboration with the BEC would likely only be more protective of water resources if there was a specific site of Tribal importance related to water resources that would influence harvest location.

COTTONWOOD AND WILLOW HARVESTING

Cottonwood and willow harvest would be allowed for Indigenous peoples' traditional or ceremonial use only and would be managed through authorizations, as described in Chapter 2. Agencies would collaborate with the BEC to implement modifications to these restrictions as necessary to provide for Indigenous peoples' traditional or ceremonial use while protecting BENM objects. This is more protective of water resources than management under Alternative A.

Recreation, Transportation, and Special Designations

OFF-HIGHWAY VEHICLE USE

Under Alternative B, 57% of the Planning Area is designated OHV limited where travel is restricted to designated routes, which is 11% less than Alternative A (68%), and 43% of the Planning Area is designated OHV closed. Under Alternative B, 11% more of the Planning Area is closed to OHV use than in Alternative A. The road in Arch Canyon would remain open to OHV use, which would continue to impact water resources and water quality conditions, including increased erosion and sediment loading from unstable streambanks at road crossings and from the sections of road located within the stream channel. Closing areas to OHV use would eliminate impacts from OHV use, as described in Section 3.4.3.2.2.

DISPERSED CAMPING

Under Alternative B, dispersed camping would not be allowed within 200 feet of springs and water improvements unless in designated areas to allow space for wildlife and livestock to access water. This management would result in more surface disturbance near water sources than Alternative A.

Additionally, under Alternative B, management would limit dispersed camping areas in or near riparian areas or water sources if uses related to camping are determined to be a causal factor in adverse impacts to surface waterbody, water quality conditions and/or riparian functions. Limitations would be those required to maintain water quality and riparian function. This is more protective than Alternative A because it allows limitation of camping in known areas of disturbance.

Rights-of-Way

Under Alternative B, approximately 407,038 acres of BLM-administered lands would be ROW exclusion areas (approximately 1% more acres than under Alternative A); 662,439 acres of BLM-administered lands would be ROW avoidance areas (348% more acres than under Alternative A); and 5,477 acres of BLM-administered lands would be open to ROW authorizations (1% of Alternative A). Additionally, 46,343 acres of NFS lands within the Planning Area would be designated as ROW exclusion areas (0.09% more acres than under Alternative A), and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use avoidance areas (200% more acres than under Alternative A). Because more of the Planning Area is ROW avoidance and exclusion under Alternative B, there would be fewer surface-disturbing impacts as described in Section 3.4.3.2.2 than under Alternative A.

Livestock Grazing

Appendix I summarizes the total acreage of land available for grazing, trailing only, or unavailable per each alternative for all HUC 12 watersheds. See Appendix I for a full summary of all HUC 12 watersheds and acreage of management designations.

Under Alternative B, there is a total of 1,194,529 acres available for livestock grazing (approximately 88% of the total Planning Area). This is approximately 2% less than what is available under Alternative A. The minimal difference in acreage open to livestock grazing compared to Alternative A suggests that impacts would be similar to those described in management under Alternative A.

Livestock is also managed under Alternative B to avoid trailing livestock along the length of riparian areas except where existing livestock trailing corridors occur. Existing livestock trailing corridors

where damage is occurring in riparian areas would be rehabilitated, and management actions would be implemented if monitoring shows that livestock are causing damage to riparian areas. If management actions are ineffective, trailing livestock along the length of riparian areas would be prohibited. The main difference in management along riparian corridors compared to Alternative A is that management measures, not BMPs, would be implemented under Alternative B, and if management actions are ineffective, livestock trailing would be prohibited. Compared to Alternative A, impacts to water resources would likely be minimized in the long run by targeting management actions instead of BMPs.

WATER DEVELOPMENT FOR LIVESTOCK

Under Alternative B, management would allow new water developments if they are consistent with the protection of BENM objects. Existing water developments for livestock or wildlife could be maintained, consistent with protecting BENM objects. This is more protective of water resources (e.g., springs, streams, riparian areas, groundwater) than Alternative A because there is a focus on Monument objects instead of livestock grazing distribution.

3.4.3.2.5. Impacts under Alternative C

Management of Riparian Areas, Floodplains, and Surface Water

Management of and impacts to surface water, riparian areas, and floodplains as they pertain to water resources is the same as described in Alternative B.

Groundwater Aquifers

Under Alternative C, for groundwater withdrawals, a hydrologic study is required for all groundwater withdrawals, as described in Alternative B, with the requirement for hydrologic studies within 0.5 mile of a water feature (rather than within 0.25 mile of a water feature) and an additional requirement for a hydrologic study for any withdrawal in the Cedar Mesa Sandstone recharge area. This requirement is more protective of groundwater depletion than Alternative A because Alternative C gives specific requirements of the hydrologic study, and also specifies the Cedar Mesa Sandstone recharge area as a specific area of interest for groundwater use.

DRINKING WATER SOURCE PROTECTION ZONES

Under Alternative C, agencies would manage discretionary uses to protect DWSP zones. This higher level of protection would improve protection of drinking water sources relative to Alternative A.

Soil and Vegetation Management

Under Alternative C, if actions cannot be avoided on slopes between 21% and 35%, an erosion control plan is required that must be approved by the agencies prior to any site-specific construction. For slopes greater than 35%, no discretionary actions would be allowed unless they are consistent with the protection of BENM objects. This protection of erosive soils is greater than under the management of Alternative A and would result in fewer impacts to water resources.

INVASIVE SPECIES MANAGEMENT

Management and impacts of invasive species as they pertain to water resources is the same as described in Alternative B.

Forestry and Woodlands

Management of and impacts to forestry and woodland resources as they pertain to water resources is the same as described in Alternative B.

COTTONWOOD AND WILLOW HARVESTING

Management of and impacts to cottonwood and willow harvest practices as they pertain to water resources is the same as described in Alternative B.

Recreation, Transportation, and Special Designations

OFF-HIGHWAY VEHICLE USE

Under Alternative C, 50% of the Planning Area is designated OHV limited where travel is restricted to designated routes, which is 18% less than Alternative A (68%), and the rest of the Planning Area is designated OHV closed. Although all vehicles would be required to have a permit, which could include protective stipulations to use the road in Arch Canyon, the road itself would continue to impact water resources and overall water quality conditions with increased erosion and sediment loading from unstable streambanks at road crossings and from the sections of road located within the stream channel. This is more protective of water resources than Alternative A. Closing areas to OHV use would eliminate impacts from OHVs, as described in Section 3.4.3.2.2.

DISPERSED CAMPING

Under Alternative C, dispersed camping would not be allowed within 200 feet of springs and water improvements unless in designated areas to allow space for wildlife and livestock to access water.

Additionally, under Alternative C, management would close dispersed camping areas in or near riparian areas or water sources if uses related to camping are determined to be a causal factor in adverse impacts to surface waterbody, water quality conditions and/or riparian functions. This is more protective than Alternative A because it allows closure of camping in known areas of disturbance with impacts to water resources and would result in fewer impacts to water resources than under Alternative A.

Rights-of-Way

Under Alternative C, approximately 505,935 acres of BLM-administered lands would be ROW exclusion areas (approximately 26% more acres than under Alternative A); 569,020 acres of BLM-administered lands would be ROW avoidance areas (285% more acres than under Alternative A); and no acres of BLM-administered lands would be open to ROW authorizations without restrictions. Additionally, 46,343 acres of NFS lands within the Planning Area would be designated as ROW exclusion areas (0.09% more acres than under Alternative A), and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use avoidance areas (200% more than under Alternative A). These designations are more restrictive to ROW developments than Alternative A, and because more of the Planning Area is ROW avoidance and exclusion under Alternative C, there would be fewer surface-disturbing impacts as described in Section 3.4.3.2.2.

Livestock Grazing

Appendix I summarizes the total acreage of land available for grazing, trailing only, or unavailable per each alternative for all HUC 12 watersheds that have lotic AIM monitoring locations. See

Appendix I for a full summary of all HUC 12 watersheds and acreage of livestock grazing management designations.

Under Alternative C, there is a total of 1,194,529 acres available for livestock grazing (approximately 88% of the total Planning Area). This is approximately 2% less than what is available under Alternative A. The minimal difference in acreage open to livestock grazing compared to Alternative A suggests that impacts would be similar to those described in management under Alternative A.

Under Alternative C, livestock would also be managed to avoid trailing along riparian corridors. Where damage has occurred to the riparian areas from trailing, site-specific rehabilitation actions would be implemented to help achieve riparian health. The main difference in management along riparian corridors compared to Alternative A is that trailing would be avoided in Alternative C, even where there may be existing disturbance. This management would allow for quicker rehabilitation of riparian corridors where there is existing damage from livestock trailing. With respect to water developments, Alternative C is the same as Alternative B, with no new water developments allowed unless they are consistent with the protection of BENM objects. Existing water developments could be maintained where they protect BENM objects.

WATER DEVELOPMENT FOR LIVESTOCK

Under Alternative C, water developments are prohibited unless a primary purpose is to protect BENM objects. Existing water developments for livestock or wildlife could be maintained, consistent with protecting BENM objects. This is more protective of water resources (e.g., springs, streams, riparian areas, groundwater) and water availability than Alternative A because new water developments are prohibited (unless a primary purpose is to protect BENM objects), and therefore would have less impact to groundwater levels and connected surface water ecosystems in the Monument and surrounding communities.

3.4.3.2.6. Impacts under Alternative D

Management of Riparian Areas, Floodplains, and Surface Water

Management of and impacts to surface water, riparian areas, and floodplains as they pertain to water resources is the same as described in Alternative B.

Groundwater Aquifers

Under Alternative D, for groundwater withdrawals, no new groundwater withdrawals would be permitted on BENM unless they are proposed specifically to protect BENM objects and/or Indigenous peoples' traditional and ceremonial uses. This management is more protective of groundwater depletion than Alternative A because Alternative D prohibits new groundwater withdrawals unless specifically to protect BENM objects and or Tribal uses.

DRINKING WATER SOURCE PROTECTION ZONES

Under Alternative D, agencies would manage discretionary uses to protect DWSP zones. This higher level of protection would improve protection of drinking water sources relative to Alternative A.

Soil and Vegetation Management

Under Alternative D, if actions cannot be avoided on slopes between 21% and 30%, an erosion control plan is required that must be approved by the agencies prior to any site-specific

construction. For slopes greater than 30%, no discretionary actions would be allowed unless they are consistent with the protection of BENM objects. This protection of erosive soils is greater than under the management of Alternative A and would result in less sediment loading to streams and altered hydrology in the Planning Area resulting in fewer impacts to water resources relative to Alternative A.

INVASIVE SPECIES MANAGEMENT

Management of and impacts to surface water, riparian areas, and floodplains as they pertain to water resources is the same as described in Alternative B.

Forestry and Woodlands

Management of forestry and woodland resources as they pertain to water resources is the same as described in Alternative B.

COTTONWOOD AND WILLOW HARVESTING

See impacts and management actions under Alternative B.

Recreation, Transportation, and Special Designations

OFF-HIGHWAY VEHICLE USE

Under Alternative D, 26% of the Planning Area is designated OHV limited where travel is restricted to designated routes, which is 37% less than Alternative A (62%), and the rest of the Planning Area (66%) is designated OHV closed. This is more protective of water resources than Alternative A because it would eliminate erosion and ground disturbance, as well as streambank alteration from the use of OHVs, on more acreage within the Planning Area. Closing areas to OHV use, including the Arch Canyon Road, would eliminate impacts from OHVs, as described in Section 3.4.3.2.2.

DISPERSED CAMPING

Under Alternative D, no camping would be allowed within 0.25 mile of springs and water improvements unless in designated sites to allow for wildlife and livestock to access water. This management action would benefit water resources because it would decrease disturbance in riparian and floodplain areas. This is more protective of water resources than Alternative A, which only prohibits camping within approximately 0.04 mile (200 feet) of springs and water improvements.

Additionally, under Alternative D, management would close dispersed camping areas in or near surface waterbodies if uses related to camping are determined to be a causal factor in adverse impacts to surface waterbody and/or riparian functions. This is more protective than Alternative A because it allows closure of camping in known areas of disturbance with impacts to water resources.

Rights-of-Way

Under Alternative D, approximately 802,678 acres of BLM-administered lands would be ROW exclusion areas (approximately 99% more acres than under Alternative A); 272,278 acres of BLM-administered lands would be ROW avoidance areas (84% more acres than under Alternative A); and no acres of BLM-administered lands would be open to ROW authorizations without restrictions. Additionally, 46,343 acres of NFS lands within the Planning Area would be designated as ROW

exclusion areas (0.09% more acres than under Alternative A), and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use avoidance areas (200% more than under Alternative A). These designations are more restrictive to ROW developments than Alternative A, and because more of the Planning Area would be ROW avoidance and exclusion under Alternative D, there would be fewer surface-disturbing impacts as described in Section 3.4.3.2.2.

Livestock Grazing

Appendix I summarizes the total acreage of land available for grazing, trailing only, or unavailable per each alternative for all HUC 12 watersheds. See Appendix I for a full summary of all HUC 12 watersheds and acreage of livestock grazing management designations.

Under Alternative D, there is a total of 953,692 acres available for livestock grazing (approximately 70% of the total Planning Area). This is approximately 20% less than what is available under Alternative A. Reduction in acreage available to livestock grazing would likely reduce impacts of this alternative, relative to Alternative A.

Under Alternative D, livestock grazing would be eliminated from Upper Lime Creek and Upper Dark Canyon areas, which have important springs and other water resources. These water resources would be protected from impacts due to livestock grazing. Alternative D is more protective of water resources than Alternative A for this reason. Additionally, livestock is managed under Alternative D to prohibit trailing along the length of riparian areas and to rehabilitate existing livestock trailing corridors where damage has occurred in riparian areas. This is more protective of riparian ecosystems than Alternative A. Prohibiting livestock in riparian areas decreases sediment and *E. coli* loading to nearby surface waters.

WATER DEVELOPMENT FOR LIVESTOCK

Under Alternative D, new water developments are prohibited, and livestock would be excluded from perennial surface water (except existing stock ponds) and associated riparian areas and springs. Existing water developments for livestock or wildlife would be removed unless they protect BENM objects. This is more protective of water resources (springs, riparian areas, groundwater) and water availability than Alternative A because new water developments are prohibited, existing water developments would be removed, and livestock would be excluded from perennial surface water (except existing stock ponds) and associated riparian areas and springs. These areas are sensitive to impacts from livestock grazing.

3.4.3.2.7. Impacts under Alternative E

Management of Riparian Areas, Floodplains, and Surface Water

Under Alternative E, no new discretionary actions that alter vegetative cover, result in stream channel instability or loss of channel cross-sectional area, or reduce water quality would be allowed within the 100-year floodplain or within 0.5 mile of springs, riparian areas, and intermittent and perennial streams unless absolutely necessary to protect BENM objects. This is more protective than Alternative A because it does not provide any exceptions to this exclusion of discretionary actions in riparian areas.

Groundwater Aquifers

Under Alternative E, no new groundwater withdrawals would be permitted on BENM unless they are proposed specifically to protect BENM objects. This management is more protective of groundwater

depletion than Alternative A because Alternative E prohibits new groundwater withdrawals or diversions unless necessary to ensure the protection of BENM objects and requires a hydrologic study for all proposed groundwater withdrawals.

DRINKING WATER SOURCE PROTECTION ZONES

Under Alternative E, agencies would manage discretionary uses to protect DWSP zones. This higher level of protection would improve protection of drinking water sources relative to Alternative A.

Soil and Vegetation Management

Under Alternative E, if actions cannot be avoided on slopes between 21% and 30%, an erosion control plan is required that must be approved by the agencies prior to any site-specific construction. This erosion control plan must include an erosion control strategy and an agency-approved survey and design of the erosion control plan and must be created in collaboration with the BEC. Additionally, no surface-disturbing activities would be allowed on slopes greater than 30% unless absolutely necessary to protect BENM objects. This protection of erosive soils is greater than under the management of Alternative A.

INVASIVE SPECIES MANAGEMENT

Under Alternative E, agencies would collaborate with the BEC to identify and reduce tamarisk, Russian olive, woody invasive species, herbaceous species, and other noxious weeds. Minimally invasive treatment would be used and native plants would be used in the reseeded. Additionally, treatment would be implemented seasonally and in collaboration with the BEC. This treatment of invasive species is greater and establishes more native ecosystems than what is currently under the management of Alternative A. Treating invasive species and allowing for more native vegetation to dominate riparian areas and re-establishing riparian buffers can lead to increased sediment and pollutant filtration and increased shade for temperature and dissolved oxygen regulation.

Forestry and Woodlands

Under Alternative E, riparian, floodplain, aquatic areas, and springs would be excluded from wood product use except where inconsistent with the Religious Freedom Restoration Act and other applicable laws. Private collection of wood products would not be prohibited where such prohibition constitutes a substantial burden on religious practices. Agencies would collaborate with the BEC and culturally affiliated Tribal Nations on identification of those uses.

Additionally, management would evaluate forest and wood product harvest impacts to vegetation cover and soil erosion. If there is indication that wood product harvest is causing increased soil erosion, agencies would alter the allowable harvest area or harvest season in collaboration with the BEC to protect specific resources uses and allow for reclamation and rest. This management of forest harvesting is very similar to management under Alternative A, with the main difference being collaboration with the BEC and incorporation of aquatic areas and springs into exclusion areas for harvesting. These slight differences would be more protective of riparian areas and surface water sources, particularly those that are impaired for sediment.

COTTONWOOD AND WILLOW HARVESTING

Harvest of cottonwood, willow, and other plants used for Indigenous peoples' traditional and ceremonial uses would be allowed through notification of use through a point of contact and managed as described in Chapter 2. Agencies would collaborate with the BEC to implement

modifications to these restrictions as necessary to provide for Indigenous peoples' traditional or ceremonial use while protecting BENM objects. This management is more protective of water resources than under Alternative A.

Recreation, Transportation, and Special Designations

OFF-HIGHWAY VEHICLE USE

Under Alternative E, Monument acreage designated as OHV limited or OHV closed use is the same as Alternative D. This is more protective of water resources than Alternative A because it would eliminate erosion and ground disturbance, as well as streambank alteration from the use of OHVs, on more acreage within the Planning Area. Closing areas to OHV use, including Arch Canyon road, would eliminate impacts from OHVs, as described in Section 3.4.3.2.2.

DISPERSED CAMPING

Under Alternative E, there would be no camping allowed within 0.25 mile of surface water, unless in an existing or designated camping site or area. This is more protective of water resources than Alternative A, which only prohibits camping within approximately 0.04 mile of springs and water improvements.

Additionally, under Alternative E, management would close dispersed camping areas in or near surface waterbodies if uses related to camping are determined to be a causal factor in adverse impacts to surface waterbody and/or riparian functions. This is more protective than Alternative A because it allows closure of camping in known areas of disturbance with impacts to water resources.

Rights-of-Way

Under Alternative E, approximately 1,058,613 acres of BLM-administered lands would be ROW exclusion areas (approximately 166% more acres than under Alternative A); 16,342 acres of BLM-administered lands would be ROW avoidance areas (approximately 11% of Alternative A); and no acres of BLM-administered lands would be open to ROW authorizations without restrictions. Additionally, 46,343 acres of NFS lands within the Planning Area would be designated as ROW exclusion areas (0.09% more acres than under Alternative A), and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use authorization avoidance areas (200% more than under Alternative A). These designations are more restrictive to ROW developments than Alternative A, and because more of the Planning Area is ROW avoidance and exclusion under Alternative E, there would be fewer surface-disturbing impacts as described in Section 3.4.3.2.2.

Livestock Grazing

See Appendix I for a full summary of all HUC 12 watersheds and acreage of livestock grazing management designations.

Under Alternative E, there is a total of 1,194,529 acres available for livestock grazing (approximately 88% of the total Planning Area). This is approximately 2% less than what is available under Alternative A. Additional actions under Alternative E, including prioritization of the review and processing of grazing permits and leases; identifying subareas of allotments necessary for closure; reassessment of stocking levels and season of use; reassessment of management approach; and identification of resource thresholds, monitoring, and automatic responses related

to land health and/or impacts to cultural and sacred resources. These additional actions could provide additional protection to water resources from grazing when compared to Alternative B.

Livestock would be managed under Alternative E to prohibit trailing along the full length of riparian areas and to rehabilitate existing livestock trailing corridors where damage has occurred in riparian areas. This is more protective of riparian ecosystems than Alternative A. Prohibiting livestock in riparian areas decreases sediment and *E. coli* loading to nearby surface waters. Additionally, as part of livestock management under Alternative E, the BEC would collaborate with the agencies to facilitate infrastructure to encourage cattle away from springs. Studies in the Monument have shown that livestock impacts to springs can be mitigated by infrastructure such as fencing.

WATER DEVELOPMENT FOR LIVESTOCK

Under Alternative E, new water developments would be prohibited for domestic livestock unless necessary to protect BENM objects. Existing water developments for livestock or wildlife would be removed unless they protect BENM objects, where feasible. Enclosures or other physical barriers would be used to prevent livestock from directly accessing or impairing springs, seeps, groundwater-dependent ecosystems, and other sensitive riparian areas. Water wells, stock tanks, and catchments that are no longer in active use would be capped or covered for safety purposes. Grazing would be managed to reduce impacts to soil erosion and damage to BSCs and in a way that protects Tribal access to culturally important plants, including trees. Grazing would be managed to protect streams, springs, and other important riparian areas. Management under Alternative E is more protective of water resources because it addresses water sources that are no longer being used and specifically manages livestock to reduce erosion and protect riparian areas.

3.4.3.2.8. Cumulative Impacts

The cumulative impacts analysis for water resources is restricted to the Planning Area and considers historical events and activities, ongoing trends, and RFFAs. The cumulative impacts of past and present actions to water resources in the Planning Area are captured in the description of the affected environment. The analysis considers the combination of human activities, natural events, and effects associated with ongoing climate change (see Appendix J).

ROWs associated with infrastructure development projects are expected to increase in the future. These would include projects such as utility lines, access roads, and waterlines. Specific projects that are currently under development include, but are not limited to, a new access road to state lands near Fry Canyon (0.15 acre) and ongoing road maintenance across the Monument. Any ongoing or proposed ROW development projects (e.g., 2023 ROW renewals DOI-BLM-UT-Y020-2023-0015-CX, renewal of ROW UTU-65892 for water pipeline DOI-BLM-UT-Y020-2022-0037-CX, and ROW UTU-96101 for geotechnical test boreholes) (see full list in Appendix J) would increase the total footprint of disturbed soils within the Planning Area, which would have an additive effect from any existing vegetation removal and manipulation, grading, excavation, and soil displacement. Effects would include additional disturbed soils from construction vehicles and potential contamination from accidental spills or discharges from construction equipment. Disturbed soils could contribute to increased erosion, stream power, and sediment delivery to surface waters, which may result in undesired geomorphic changes to stream channels and aquatic habitats as well as changes to water quality conditions within the Planning Area. Accidental spills or discharges from construction equipment could involve oil and gas contamination to nearby waterbodies and alter stream ecosystems. Appropriate site BMPs could be used to limit contamination.

Recreation and visitor use are expected to increase in the future. The activities identified as having growth potential include hiking, backpacking, mountain biking, OHV use, and applications for special recreational permits and recreational use permits. Future trail and campground systems that will result in additional ground disturbance include the Bluff River Trail (6.7 miles of trail), reconstruction of the Salt Creek Trail (<1 mile), the Goosenecks Campground and Trails (12 acres of new disturbance), and Hamburger Rock Campground improvements and expansions (2 acres of new disturbance). Although these projects will increase localized disturbance, they may disperse visitors out of other areas and limit soil disturbance to those areas authorized for specific recreational impacts. Site-specific details would clarify impacts to water resources, which could include degraded water quality conditions from increased erosion and sediment loading near trails and campgrounds, increased nutrient and *E. coli* levels from human waste disposal and/or increased water temperatures from trampling in riparian areas, which reduces shade and soil moisture. These impacts could be partly mitigated by trail and campsite design, installation of vault toilets, and trail maintenance.

Trends in livestock grazing depend on several environmental factors; however, the BLM would continue to administer rangeland health evaluations to ensure no substantial loss of soil productivity occurs in response to changes in range management. Planned range improvements, such as within the Lockhart (three Lockhart Basin fences), Indian Creek, Slickhorn, and Lake Canyon Allotments, will contribute to reducing pressures on soil disturbance outside of the range allotments. Additionally, there is projected water development associated with livestock practices. It is expected that construction of 13 earthen reservoirs and five rangeland fences on the Indian Creek Allotment (2.5 acres of disturbance) would hold surface water runoff to provide reliable water, facilitate livestock distribution, and improve control of grazing patterns and forage use levels but may reduce recharge of downstream alluvial aquifers that support riparian and aquatic habitats. Other projected projects to develop reliable water sources consist of

- two livestock water wells proposed in the East League pasture (2 acres of disturbance),
- three water wells proposed on Flats Water pasture (1.25 acres of disturbance),
- four water wells and one livestock reservoir proposed on Beef Basin and Dark Canyon Ranges (1.85 acres of disturbance),
- three water wells proposed for livestock on the Slickhorn Allotment (0.75 acre of disturbance), and
- six water wells on the Lake Canyon Allotment (1.5 acres of disturbance).

For all these projects, detailed site-specific analysis of surface and groundwater resources will be needed to determine specific impacts to water resources. Cumulative impacts to water resources from the proposed water wells within the Planning Area could include reduction in groundwater resources, increased depths to groundwater, and reduced flows at nearby springs. Depending on whether the livestock reservoir is lined or not would affect the potential impacts to water resources. If the pond is lined, the potential impacts to water resources include reduced water infiltration through soils and, therefore, reduced groundwater recharge. If the reservoir is not lined, the potential impacts to water resources would be fewer because water would continue to infiltrate through soils and recharge the groundwater aquifer.

Additionally, there are proposed water developments outside of the Planning Area that could have the potential to impact groundwater levels inside of the Planning Area. These known projects include expansion of the Daneros Mine, drilling one water well, developing one spring, and constructing three fences in Lockhart Basin; drilling two wells on Cave Canyon; the drilling of a new well by Elk Petroleum; and temporary access to Utah Trust lands to drill two water wells for cattle in Red Canyon. Cumulative impacts to water resources from the proposed water wells outside the

Planning Area could include reduction in groundwater resources, increased depths to groundwater, and reduced flows at nearby springs. The level of impacts to water resources within the Planning Area are dependent on how far the proposed actions are from the Planning Area. In addition to distance from the Planning Area, the level of impact also includes the local surface and groundwater hydrology and, for groundwater, the targeted aquifers. Impacts from the proposed spring development would be limited to the spring site and would not have cumulative impacts within the Planning Area.

Finally, because the alternatives analyzed make plan-level water resource management decisions only and because no implementation-level actions would result from this planning effort, the cumulative impacts of these reasonably foreseeable actions and the alternatives would be negligible.

3.4.4. *Terrestrial Habitat and Vegetation Resilience and Conservation*

3.4.4.1. AFFECTED ENVIRONMENT

3.4.4.1.1. Terrestrial Vegetation

Terrestrial vegetation includes plant species not associated with rivers, creeks, lakes, springs, wetlands, or other surface or shallow subsurface water. Most Planning Area vegetation is terrestrial. Terrestrial vegetation provides an enormous variety of functions in an ecosystem and a variety of human and animal uses, including longstanding use of plants and woodland resources by the Tribal Nations of the BEC for food, medicine, shelter, dyes, fibers, oils, resins, gums, soaps, waxes, latex, tannins, and religious and spiritual purposes, as described in the 2022 BEITC LMP. For the Tribal Nations of the BEC, ethnobotany is a means of documenting the cultural significance of plants, including the seasonality of use, harvesting practices, and traditional management. There are specific plants that are used in ceremonies, and often there are cultural practices surrounding their collection (see Appendix L).

Terrestrial vegetation stabilizes soils, abates erosion, uses carbon dioxide, releases oxygen, increases species diversity, and provides habitat and food for animals and resources for human use. The Planning Area also provides habitat for a variety of endemic, rare, and culturally important species of plants. Ecosystems reflect complex sets of interactions between plants, animals, soil, water, air, temperature, topography, fire, and humans; for the Tribal Nations of the BEC, “cultural resources and natural resources are not two different categories” (see Appendix L). Influences exerted on one component affect other components in the system. Vegetation and habitat management affects other resources, including wildlife, noxious weed and invasive vegetation management, rangeland management, recreational uses, and more. For example, management of healthy woodlands has many indirect effects on other resources and values (e.g., wildlife and personal woodlands use). Management of noxious weeds and invasive vegetation is central to ecosystem health, with effects on many resources. Currently, due to past management such as fire suppression, artificially high fuel loads that stretch across broad, remote landscapes pose unique management challenges in terms of method (e.g., prescribed fire) and outcomes (e.g., potential for noxious weed and invasive infestations), as well as management of human safety during wildfire response and/or treatments.

3.4.4.1.2. Existing Vegetation Types

LANDFIRE’s Existing Vegetation Type product represents the current distribution of terrestrial ecological systems (LANDFIRE 2022). LANDFIRE defines terrestrial ecological systems as groups of plant community types that tend to co-occur within landscapes with similar ecological processes,

substrates, and/or environmental gradients. Acres of LANDFIRE Existing Vegetation Types in the Planning Area are summarized in Table 3-19. Detailed descriptions of the ecological systems are available in NatureServe (2009). Appendix A, Figure 3-15, Vegetation types in the Planning Area, gives a general overview of the vegetation cover types present in the Planning Area. The LANDFIRE vegetation types were grouped into general categories. Proclamation 10285 specifically mentions Engelmann spruce (*Picea engelmannii*), ponderosa pine (*Pinus ponderosa*), quaking aspen (*Populus tremuloides*), and subalpine fir (*Abies lasiocarpa*) because they are unusual plants to find in a desert environment and BENM contains unusually old and/or untouched stands of these species.

Table 3-19. LANDFIRE Existing Vegetation Types in the Planning Area

Existing Vegetation Type	Acres (%)
Colorado Plateau Pinyon-Juniper Woodland	491,390 (33%)
Colorado Plateau Blackbrush-Mormon-tea Shrubland	327,099 (22%)
Colorado Plateau Mixed Bedrock Canyon and Tableland	217,326 (15%)
Colorado Plateau Pinyon-Juniper Shrubland	188,972 (13%)
Southern Rocky Mountain Ponderosa Pine Woodland	57,483 (4%)
Inter-Mountain Basins Big Sagebrush Shrubland	34,966 (2%)
Inter-Mountain Basins Mixed Salt Desert Scrub	23,901 (2%)
Southern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest and Woodland	17,155 (1%)
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	16,298 (1%)
Inter-Mountain Basins Semi-Desert Shrub-Steppe	14,544 (1%)
Great Basin & Intermountain Ruderal Shrubland	12,959 (1%)
Southern Colorado Plateau Sand Shrubland	12,683 (1%)
Rocky Mountain Lower Montane-Foothill Shrubland	11,297 (1%)
Rocky Mountain Cliff Canyon and Massive Bedrock	7,567 (1%)
Rocky Mountain Aspen Forest and Woodland	6,544 (<1%)
Inter-Mountain Basins Shale Badland	6,006 (<1%)
Western Cool Temperate Pasture and Hayland	5,334 (<1%)
Rocky Mountain Lower Montane-Foothill Riparian Woodland	3,161 (<1%)
Inter-Mountain Basins Greasewood Flat	3,095 (<1%)
Inter-Mountain Basins Montane Sagebrush Steppe	2,961 (<1%)
Western Cool Temperate Urban Shrubland	2,481 (<1%)
Southern Rocky Mountain Mesic Montane Mixed Conifer Forest and Woodland	2,305 (<1%)
Inter-Mountain Basins Semi-Desert Grassland	1,908 (<1%)
Colorado Plateau Mixed Low Sagebrush Shrubland	1,729 (<1%)
Inter-Mountain Basins Active and Stabilized Dune	1,611 (<1%)
Inter-Mountain Basins Mat Saltbush Shrubland	1,598 (<1%)
Great Basin & Intermountain Introduced Annual Grassland	1,439 (<1%)
Great Basin & Intermountain Introduced Annual and Biennial Forbland	1,324 (<1%)
Western Cool Temperate Fallow/Idle Cropland	1,054 (<1%)
Great Basin & Intermountain Introduced Perennial Grassland and Forbland	1,005 (<1%)

Existing Vegetation Type	Acres (%)
Interior West Ruderal Riparian Scrub	996 (<1%)
Southern Rocky Mountain Montane-Subalpine Grassland	793 (<1%)
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	782 (<1%)
Interior Western North American Temperate Ruderal Grassland	705 (<1%)
Western Cool Temperate Urban Evergreen Forest	615 (<1%)
Interior West Ruderal Riparian Forest	476 (<1%)
Rocky Mountain Subalpine-Montane Mesic Meadow	429 (<1%)
Interior Western North American Temperate Ruderal Shrubland	414 (<1%)
Western Cool Temperate Close Grown Crop	361 (<1%)
Western Cool Temperate Urban Herbaceous	348 (<1%)
Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland	323 (<1%)
Rocky Mountain Lower Montane-Foothill Riparian Shrubland	301 (<1%)
Western Cool Temperate Developed Shrubland	260 (<1%)
North American Arid West Emergent Marsh	203 (<1%)
Western Cool Temperate Wheat	165 (<1%)
Rocky Mountain Alpine Bedrock and Scree	126 (<1%)
Total	1,484,490 (100%)

Source: LANDFIRE (2022).

3.4.4.1.3. Ecological Site Groups

Ecological site groups are generalized groupings of NRCS ecological sites. Ecological sites provide additional context and information to land managers about how landscapes may respond to management. Nauman et al. (2022) generalized the ecological site concepts based on unifying underlying soil, geomorphology, and climate patterns to delineate ecological site groups in the Upper Colorado River region, where an inventory of ecological sites is incomplete. The type and amount of ecological site groups for BLM-administered lands in the Planning Area are summarized in Table 3-20. No data for ecological site groups were available for some NFS lands.

Table 3-20. Ecological Site Groups in the Planning Area

Ecological Site Group	Acres (%)
Arid Warm – Sandy Uplands, Loamy Uplands	283,780 (19%)
Semiarid Warm – Shallow, Deep Rocky	251,638 (17%)
Arid Warm – Very Shallow	147,364 (10%)
Semiarid Warm – Very Shallow	139,828 (9%)
No Data	132,420 (9%)
Semiarid Warm – Sandy Uplands, Loamy Uplands	122,290 (8%)
Arid Warm – Shallow	116,798 (8%)
Semiarid Warm – Breaks	74,456 (5%)
Semiarid Warm – Finder Uplands	67,760 (5%)
Semiarid Cool – Shallow	33,607 (2%)

Ecological Site Group	Acres (%)
Arid Warm – Breaks	23,678 (2%)
Outcrops	21,885 (1%)
Semiarid Cool – Deep Rocky	16,019 (1%)
Semiarid Cool – Breaks	12,277 (1%)
Semiarid Cool – Saline Uplands, Sandy Uplands, Loamy Uplands	11,854 (1%)
Arid Warm – Sandy Bottoms	11,404 (1%)
Semiarid Warm – Sandy Bottoms, Bottoms	7,547 (1%)
Riparian	5,492 (<1%)
Arid Warm – Saline Uplands	2,762 (<1%)
Arid Warm – Deep Rocky	1,769 (<1%)
Arid Warm – Saline Bottoms, Bottoms	1,591 (<1%)
Semiarid Warm – Saline Uplands	1,171 (<1%)
Arid Warm – Gypsum	898 (<1%)
Semiarid Cool – Very Shallow	444 (<1%)
Arid Warm – Saline Hills	387 (<1%)
Semiarid Warm – Clay Uplands	314 (<1%)
Semiarid Warm – Saline Bottoms	208 (<1%)
Arid Warm – Finer Uplands, Clay Uplands	170 (<1%)
Semiarid Warm – Saline Hills	88 (<1%)
Semiarid Warm – Gypsum	50 (<1%)
Semiarid Cool – Bottoms	30 (<1%)
Semiarid Cool – Clay Uplands	9 (<1%)
Semiarid Cool – Sandy Bottoms	8 (<1%)
Semiarid Cool – Saline Hills	4 (<1%)
Total	1,490,000 (100%)

Note: Ecological site groups are only measured on BLM-administered lands and not on some NFS lands, so the acreages in the tables in this section may be less than the total acreage under each management alternative.

The ecological site groups have a naming convention using soil geomorphic units with their respective climate zones derived from an aridity index (an indicator of the degree of dryness of a climate at a given location taking into account the amount of precipitation and the potential evapotranspiration of vegetation) and maximum temperature of the hottest month (Nauman et al. 2022). Table 3-21 is adapted from Table A.2 from Nauman et al. (2022) and provides general soil geomorphic unit descriptions. The Arid Warm climate zone was defined as having an aridity index of less than 0.144 and a maximum temperature of the warmest month greater than 77.04 °F (25.02 °C). The Semiarid Warm climate zone has an aridity index greater than 0.144 and a maximum temperature of the warmest month greater than 77.04 °F. The third zone, which was labeled as Semiarid Cool, has an aridity index greater than 0.144 and a maximum temperature of the warmest month less than 77.04 °F (Nauman et al. 2022). Table A.2 contains brief narratives for individual soil geomorphic units that relate to ecological site group designations. Soil geomorphic units encompass topographic mediation of moisture, soil salinity, soil depth, slope, rock content, and soil texture (Nauman et al. 2022). When combined with climatic factors, these units make up the ecological site groups in BENM.

Table 3-21. Geomorphic Unit Descriptions Adapted

Soil Geomorphic Unit	Soil-Landform Setting Key	Dominant Plant Communities	Notable State and Transition Model Features
Outcrops	Areas dominated by bedrock outcrops (equal to or greater than 75%) with only small pockets of soil that may support vegetation.	Very low productivity areas with vegetation sparse and spread out in pockets or fissures. Outcrops with more fractured bedrock can support more vegetation.	Not applicable.
Riparian	Variety of soils in floodplains or areas with perennial plant or trees with available water tables or surface water.	Dominated by obligate riparian vegetation (for example, <i>Salix</i> spp., <i>Populus</i> spp., and <i>Carex</i> spp.) and usually very high production.	Aridification, gullying, or channelization can cause these sites to irreversibly revert to bottoms or uplands.
Saline Bottoms	Gently sloping, low-lying areas that receive excess moisture beyond ambient precipitation (run-on or subsurface moisture). Most have ephemeral washes and streams (not perennial). Soils are influenced by salts and have subsurface soil electrical conductivity greater than 4 decisiemens per meter (saturated paste).	Higher productivity than other saline groups. Alkali sacaton (<i>Sporobolus airoides</i>) and black greasewood (<i>Sarcobatus vermiculatus</i>) are common dominant species. Generally, more grass-dominated when in a reference state.	Gullying or channelization can lead to alternative states or cause these sites to irreversibly revert to uplands. Salts also make them less resilient to surface disturbance. Greasewood and other shrubs often increase in alternative states.
Sandy Bottoms	Other gently sloping, low-lying areas that receive excess moisture beyond ambient precipitation (run-on or subsurface moisture). Most have ephemeral washes and streams (not perennial). Soils are sandier, averaging greater than 50% sand and less than 27% clay in both surface and subsurface horizons.	Diverse shrubs and C4 grasses often dominate. These sites have higher productivities than upland counterparts. Can support big sagebrush (<i>Artemisia tridentata</i>) in Semiarid climate zones (aridity index equal to or greater than 0.144).	Often more prone to bare ground exposure and associated wind erosion. Can become an aeolian sand source for downwind dunes. Also highly prone to loss of perennial species.
Bottoms	Other gently sloping, low-lying areas that receive excess moisture beyond ambient precipitation (run-on or subsurface moisture). Most have ephemeral washes and streams (not perennial).	Dominated by grasses and shrubs associated with run-in landscape settings (high surface or groundwater available). Basin big sagebrush (<i>Artemisia tridentata tridentata</i>) can dominate. These sites have higher productivities.	Gullying or channelization can cause state transition or even irreversible reversion to uplands. Woody encroachment is also commonly observed in these areas.
Gypsum	Upland areas with soils averaging greater than 5% gypsum in the surface or greater than 10% gypsum in the subsurface, but with a surface sodium adsorption ratio less than 8. These areas are often hilly badlands, but they can also be more gentle terrain.	Sub-shrublands with limited grasses dominated by C4 species and low overall productivities. The species composition is determined by gypsum tolerance. They often have very high BSC cover.	Favor BSC development. Have the least number of documented alternative states, indicating a high resistance to state change. Limited annual and shrub invasions have been observed.
Saline Hills	Other upland areas that are highly salt limited (often sodic), erosion features are common, often dissected badland hillslopes. These soils include surface sodium adsorption ratios greater than 7 and/or average electrical conductivity greater than 4 decisiemens per meter in surface or average electrical conductivity greater than 9 decisiemens per meter in subsurface.	Mat, Castle Valley, and Gardner's saltbush (<i>Atriplex corrugata</i> , <i>A. cuneata</i> , <i>A. gardneri</i>) often dominate with associated salt-tolerant species. Low productivity with even grass and shrub production in reference communities.	Erosion prone, especially with disturbance that exposes bare ground. Can lose perennial grasses and increase in shrub dominance. Often invaded by annuals (for example, cheatgrass [<i>Bromus tectorum</i>], <i>Salsola</i> spp., and <i>Halogeton glomeratus</i>).

Soil Geomorphic Unit	Soil-Landform Setting Key	Dominant Plant Communities	Notable State and Transition Model Features
Saline Uplands	Other uplands with moderate salt limitations, including average surface electrical conductivity greater than 1.5 decisiemens per meter or average subsurface electrical conductivity greater than 2.	Salt-tolerant grasslands with moderate salt-tolerant shrub component (for example, shadscale and low sage). Moderate to moderately low productivity.	Less susceptible to herbaceous and woody invasion, as well as erosion and bare ground, than similar soil geomorphic units with more or less salinity.
Breaks	Other uplands on steep slopes (greater than 35%) and rocky soils with greater than 40% (by volume) rock content in surface soil horizons.	Very low productivity areas that favor woody species or resilient forbs. Vegetation is often sparse and limited by unstable slopes, poor water retention, and high rock content.	Particularly susceptible to cheatgrass and other annual invasions. Few other alternative state issues observed.
Very Shallow	Other uplands with soils less than 12 inches (30 centimeters) depth until a bedrock contact. Sites are often rocky and rugged.	Generally low production with an even mix of trees (above a certain aridity level), shrubs, and grasses. Blackbrush (<i>Coleogyne ramosissima</i>) can dominate in drier areas.	Drought prone and susceptible to annual invasion. Can have bare ground states, erosion issues, and perennial loss of both grass and woody species.
Shallow	Other uplands with soils less than 22 inches (55 centimeters) to a bedrock contact.	Commonly low to moderately productive pinyon-juniper woodlands, but also supports substantial grass and shrub components that vary in relative abundance by climate. Blackbrush can dominate in drier areas.	Drought prone and susceptible to annual invasion. More woody encroachment than Very Shallow. Bare ground, biocrust loss, eroded, and perennial loss states possible.
Deep Rocky	Other uplands with soils that average greater than 30% rock fragments by volume in either surface or subsurface horizons. Often rugged topography but can be high-energy alluvial deposits. These soils also tend to have high calcium carbonate contents.	Exhibit a wide variety of dominant grasses, shrubs, and trees, including blackbrush, big sagebrush, and juniper at lower elevations. Generally moderate to moderately high production. Species composition is generally very mixed among species and functional groups.	High propensity for herbaceous invasion, moderate for woody encroachment. Resistant to erosional states, but moderately susceptible to bare ground and perennial loss states.
Clay Uplands	Other uplands with average surface clay greater than 30% or subsurface clay averaging greater than 35%. These sites often exhibit vertic (shrink/swell) properties.	Productive savannas and grasslands often dominated by grasses more adapted to shrink-swell soils. However, big sagebrush can dominate these areas in wetter climates.	Moderate water erosion, herbaceous invasion, and bare ground state risk. Common loss of perennial grasses and woody encroachment.
Sandy Uplands	Other uplands with very sandy eolian and alluvial deposits that average greater than 75% sand in both surface and subsurface horizons. These soils are generally quite young and low in carbonates (less than 10%—usually less than 5%).	Productive savannas and grasslands with a substantial shrub component (primarily four-wing saltbush (<i>Atriplex canescens</i>), but with some sand sage (<i>Artemisia filifolia</i>), blackbrush, <i>Ephedra spp.</i> , and big sagebrush on wetter sites). Blackbrush can dominate this group as a long-term state, but it is less common than on shallow sites or sites with calcic horizons and slightly finer textures. Dunes have been described as a reference state possibility for the driest and most exposed areas. Big sage can also dominate in wetter climates.	Drought and disturbance can cause severe wind erosion and dune mobilization. Sites with water erosion issues have also been observed. There is a high propensity for annual invasion, woody encroachment, and perennial species loss (particularly grass). There is also a moderate risk of bare ground states.

Soil Geomorphic Unit	Soil-Landform Setting Key	Dominant Plant Communities	Notable State and Transition Model Features
Loamy Uplands	Other uplands with surface soil textures of Sand, Loamy Sand, or Sandy Loam, but finer subsoil field textures or carbonate content higher than 10%.	Grasslands and savanna communities. Some areas have blackbrush communities that can dominate, but often in mosaic with grasslands as a long-term state. Big sage and other shrubs can also dominate.	Similar to Sandy Uplands, but with less risk of most alternative states and no erosional states related to water erosion documented.
Finer Uplands	Other uplands that tend to have finer loamy textures.	Savannas and shrublands with grasses; these are mostly dominated by Wyoming big sagebrush (<i>Artemisia tridentata wyomingensis</i>) at middle elevations but include some sites dominated by winterfat (<i>Krascheninnikovia lanata</i>) and other shrubs.	High risk of herbaceous invasion, woody encroachment, perennial species loss, and bare ground states. Some documentation of eroded states.

The BLM uses, in part, AIM Strategy data (Herrick et al. 2021) and landscape monitoring framework data (Karchergis and Simpson 2020) as tools to determine land conditions, trends, plant groups, cover rates, and functions. These data are collected from monitoring plots across the western United States, including 139 plots in BENM (Table 3-22, Appendix A, Figure 3-16, Terrestrial and lotic AIM data points within BENM administrative boundaries), and include direct field observations of standardized indicators. See Appendix K for more information on AIM data.

Prior to assessing the overall land health at each terrestrial AIM plot, benchmarks were needed for each of the seven vegetation parameters. A discussion of benchmarks as they pertain to soil analysis is included in Section 3.4.2.1.5. The same methodology was used for the vegetation analysis.

Table 3-22. Watershed Summary of the Proportion of Terrestrial Assessment, Inventory, and Monitoring Data Points within Each Hydrologic Unit Code 10 Watershed Meeting Expected Respective LANDFIRE Biophysical Setting Vegetation Conditions for the Semiarid Benchlands/Canyonlands and Arid Canyonlands Ecoregion (L4 20c and 20d, respectively)

HUC 10	AIM Plots (n)	Observations Meeting Expected BPS Condition (%)						
		Annual Grass	Canopy Gap 100 to 200 cm	Canopy Gap 200 cm Plus	Perennial Grass	Shrub	Total Follar	Tree
Cataract Canyon-Colorado River	5	60.0	40.0	60.0	80.0	80.0	40.0	80.0
Comb Wash-San Juan River	23	95.7	78.3	34.8	78.3	73.9	56.5	78.3
Copper Canyon-San Juan River	6	100.0	83.3	33.3	83.3	83.3	33.3	100.0
Cottonwood Wash	10	100.0	80.0	60.0	90.0	60.0	20.0	100.0
Dark Canyon	13	100.0	69.2	61.5	92.3	92.3	84.6	92.3
Grand Gulch	19	100.0	94.7	21.1	94.7	52.6	26.3	52.6
Gypsum Canyon	3	66.7	100.0	100.0	100.0	100.0	100.0	100.0
Harts Draw	6	50.0	83.3	66.7	100.0	66.7	50.0	83.3
Indian Creek	14	100.0	92.9	35.7	92.9	85.7	50.0	85.7
Lime Creek-San Juan River	19	94.7	100.0	15.8	94.7	63.2	31.6	68.4
Lockhart Canyon-Colorado River	2	100.0	0.0	50.0	100.0	50.0	50.0	100.0
White Canyon	19	94.7	73.7	26.3	84.2	84.2	36.8	73.7

Source: BLM and USDA Forest Service GIS (2022).

The sagebrush ecosystem is one of the most imperiled ecosystems in North America due to a variety of factors. Very little surviving sagebrush across its range is undisturbed, with 50% to 60% having altered understories or having been lost to direct conversions from catastrophic wildfire, farming, urban development, tree encroachment, and livestock grazing (Hartsell et al. 2020; Knick et al. 2003; USFWS 2013). Since the 1850s, sagebrush-steppe communities, which dominated the Intermountain West, have shifted to pinyon-juniper shrublands or invasive annual-dominated communities (Miller and Wigand 1994; Tausch et al. 1981). Pinyon-juniper shrublands have increased substantially in both density and extent throughout the Intermountain West over the past 130 to 150 years, often invading landscapes previously dominated by sagebrush (Miller and Wigand 1994; Tausch et al. 1981). The lack of natural disturbances, such as fire, has resulted in major changes to plant community age diversity, structure, and composition. According to terrestrial AIM Strategy data (Herrick et al. 2021), only 3.8% of monitoring locations in BENM have abundant sagebrush (Table 3-23).

Table 3-23. Number and Percentage of Planning Area Monitoring Locations with Different Amounts of Sagebrush Cover, 2013–2021

Indicator	Value Category	Number of Plots	Percentage of Plots in the Planning Area
Sagebrush cover	< 5%	97	92.4%
Sagebrush cover	5%–9%	4	3.8%
Sagebrush cover	> 9%	4	3.8%

Source: BLM and USDA Forest Service GIS (2022).

There have been significant changes to other vegetation types in BENM for the past several decades, which are summarized in Appendix A, Figure 3-18, AIM data for annual forb/grass cover changes from 1997 to 2021; Figure 3-20, AIM data for perennial forb/grass biomass changes from 1997 to 2021; Figure 3-21, AIM data for perennial forb/grass cover changes from 1997 to 2021; Figure 3-22, AIM data for shrub cover changes from 1997 to 2021; and Figure 3-23, AIM data for tree cover changes from 1997 to 2021. There has been an overall decrease in perennial and annual forb and grass cover and shrub cover throughout the Monument, as well as a decrease in perennial grass and forb aboveground biomass. There has also been an increase in tree cover, especially in the northern part of the Monument.

A range of threats to vegetation and special status plant species, including habitat degradation from livestock grazing, trampling, unauthorized or cross-country OHV use, weed spread, droughts, and pinyon-juniper encroachment, may affect individual species in different ways. The threat of climate change, however, and its associated precipitation, wildfire, and herbivory effects may be the most significant threat faced by those species. Little information is available documenting the current trends, habitat conditions, and population size of most special status plant populations throughout Utah, including BENM.

Warming temperatures, drought, fire, and other extreme weather effects are expected to increase in frequency and will likely contribute to impacts on terrestrial vegetation and special status plants as climate change continues. The Climate Toolbox (Hegewisch et al. n.d. [2023]) predicts that the BENM area at a lower emissions scenario (RCP 4.5) will have an increase of 4.8 °F (2.6 °C) in summer and winter average temperature by 2069. Precipitation for the area is predicted to remain relatively similar to that of the present day. However, the vapor pressure deficit, a measure of how plants experience moisture availability, is expected to increase in all seasons.

The increase in temperature and increase in water vapor deficit is expected to alter vegetation community composition and distribution. In many vegetation communities, canopy cover of perennial plants has been shown to be sensitive to temperature, whereas canopy cover of annual plants responds to cool season precipitation (Munson et al. 2011).

Forage demands from wildlife are anticipated to continue at the present rate or increase, as populations are stable or managed for increasing populations. Deer in the 2020 San Juan Unit Management Plan are listed as stable for the Abajo subunit and are being managed for population increases in the Elk Ridge subunit (UDWR 2020). According to the *Utah Statewide Elk Management Plan*, the elk population objective is stable to slightly above the unit population objective (UDWR 2022). Although the 2017 *Utah Pronghorn Statewide Management Plan* does not necessarily state a management objective, the plan reports pronghorn numbers as being stable (UDWR 2017), so forage demands from pronghorn are expected to continue at the present rate. Forage demand from livestock is also anticipated to continue at the present rate. Public interest in the Monument continues to grow.

Although difficult to predict, other factors, including disease, insect infestations, and management activities associated with minerals, lands and realty, forestry and woodlands, vegetation, livestock grazing, and recreation, could continue to impact desirable vegetation through declines in vegetative productivity.

The main driver that has historically affected vegetation in the region and the Planning Area is vegetation community conversion and precipitation patterns. This has been primarily due to pinyon-juniper encroachment into sagebrush communities and droughts. Loss of aspen has occurred due to large-scale insect infestations, disease outbreak, wildland fire suppression, herbivory, and browsing. Community conversion has also occurred because of invasive nonnative plant spread, including cheatgrass (*Bromus tectorum*). Anthropogenic and natural disturbances, such as wildfire and fire management activities, mineral development, ROW development, vegetation management to improve vegetative conditions, and livestock grazing, have also affected Planning Area vegetation. Pinyon-juniper shrublands have expanded over the last century into grassland and shrubland ecosystems throughout the western United States. Livestock grazing, changes in fire regimes, and climate change drive pinyon-juniper shrubland distribution. In the absence of fire (e.g., due to fire suppression policies), pinyon-juniper shrublands have infilled into sagebrush habitats, leading to increased fuel loading and greater potential for severe wildfires. Additionally, when pinyon-juniper expand into sagebrush-steppe habitats, they outcompete understory species for light, moisture, and nutrients. This cycle eventually results in a nearly complete loss of ecologically valuable understory vegetation species such as sagebrush, grasses, and forbs. Droughts limit available moisture for plant development, growth, and reproduction. These situations can reduce the frequency of plants with a corresponding increase in bare ground. The altered condition affects soils, vegetation structure and composition, water, nutrient and fire cycles, forage production, carbon storage, and plant and wildlife biodiversity.

3.4.4.1.4. Special Status Species

Utah is rich in native flora and is remarkable for its large numbers of endemic and rare plants, which are attributed to the state's diverse range of habitats (UDWR 1998). Table 3-24 lists special status plant species that consist of federally listed and BLM and USDA Forest Service sensitive plant species that have been documented or have the potential to occur in the Planning Area. In addition to plants that have federal listing, many plants in the Decision Area have cultural and traditional importance to the Tribes of the region. This includes plants utilized for food, medicine, tools, and ritual purposes. Partial lists and some studies have been conducted of these plants in the Bears Ears region, but no single comprehensive study of traditional plant knowledge exists

within BENM. Some of these important plants include those found in the hanging gardens of the region, which can include rare and/or unique orchids and sedges (Konza Prairie 2021). One of the special status species, the Kachina daisy (*Erigeron kachinensis*), was specifically mentioned in Proclamation 10285 for its unique genetic population in BENM. In addition to the importance of individual plant species, many Tribal Nations in the BEC value the interactions of plants with other parts of their natural environment (see Appendix L).

Table 3-24. Special Status Plant Species that Occur or Have Potential to Occur in the Planning Area

Common Name (Scientific name)	Habitat	Status	Known or Potential Occurrences
Chatterley onion (<i>Allium geyeri</i> var. <i>chatterleyi</i>)	Found in pinyon-juniper and ponderosa pine-manzanita community types where there is open, shallow, fine-textured sandy loam soil and rock outcrops at elevations of 6,600 to 8,200 feet.	FSS	Known
Cronquist's milkvetch (<i>Astragalus cronquistii</i>)	Found in sandy and gravelly ridges on red sandstone. Also on Mancos Shale and on substrates derived from the Morrison Formation in the eastern part of its range at elevations of 4,800 to 5,800 feet.	BSS	Potential
Navajo sedge (<i>Carex specuicola</i>)	Restricted to Navajo Sandstone seeps-springs, pockets, or hanging gardens, ranging from almost inaccessible sheer cliff faces to accessible alcoves at elevations of 5,700 to 6,000 feet. Blooms late June–July.	FT	Potential
Jones cycladenia (<i>Cycladenia humilis</i> var. <i>jonesii</i>)	Found in badland habitats in semiarid central Utah, usually on the steep slopes of hills or mesas. Grows in fine-textured soils derived from sandstone at elevations of 4,500 to 5,600 feet.	FT	Potential
Pinnate spring-parsley (<i>Cymopterus beckii</i>)	Found in sandy soils weathered from Navajo Sandstone and on slickrock ledges and cracks, generally in association with montane vegetation types at elevations of 5,500 to 8,600 feet. Blooms April–June.	FSS/BSS	Known
Hole-in-the-rock prairie-clover (<i>Dalea flavescens</i> var. <i>epica</i>)	Found in sandstone bedrock and sandy areas in blackbrush and mixed desert shrub communities at elevations between 4,700 and 5,000 feet. Blooms May–June.	BSS	Potential
Abajo draba (<i>Draba abajoensis</i>)	Found in subalpine meadows and spruce, fir, or pine forests at elevations of 6,200 to 12,500 feet. Blooms May–August.	FSS	Potential
Abajo daisy (<i>Erigeron abajoensis</i>)	Found in sagebrush, pinyon-juniper, ponderosa pine, and spruce-fir vegetation communities on open rocky or gravelly slopes at elevations of 9,100 to 11,400 feet. Blooms July–August.	FSS	Potential
Kachina daisy (<i>Erigeron kachinensis</i>)	Found in lower elevation seeps, springs, and hanging gardens and higher elevation mesic slopes in aspen and ponderosa pine at elevations of 5,200 to 8,000 feet. Blooms May–July.	FSS/BSS	Known
Bluff buckwheat (<i>Eriogonum racemosum</i> var. <i>nobilis</i>)	Found in juniper and ponderosa pine communities at elevations of 6,200 to 7,215 feet.	BSS	Potential
Canyonlands lomatium (<i>Lomatium latilobum</i>)	Found in sandy soil or crevices in Entrada and Navajo Sandstone and slot canyons. Prefers sheltered, cool habitat on all slopes and aspects at elevations of 4,800 to 6,855 feet. Blooms April–June.	FSS/BSS	Potential
Entrada skeletonplant (<i>Lygodesmia grandiflora</i> var. <i>entrada</i>)	Found in mixed desert shrub and juniper communities at elevations of 4,400 to 4,800 feet. Blooms in June.	BSS	Potential

Common Name (Scientific name)	Habitat	Status	Known or Potential Occurrences
Tuhy's breadroot (<i>Pediomelum aromaticum</i> var. <i>tuhyi</i>)	Found in pinyon-juniper and mixed desert shrub communities on the Entrada, Kayenta, and Moss Back Formations, on rimrock or shallow sand, at elevations of 5,600 to 6,500 feet. Blooms May–June.	BSS	Potential
Alcove rock-daisy (<i>Perityle specuicola</i>)	Found in desert shrub and hanging garden communities in narrow, protected canyons, alcoves, and at cliff bases in Navajo Sandstone and the Cedar Mesa Formation, at elevations of 3,700 to 4,200 feet. Blooms mid-July–late September.	BSS	Known
Drab phacelia (<i>Phacelia indecora</i>)	Found in hanging garden plant communities in alcoves at elevations of 3,600 to 4,500 feet. Known only from San Juan County, Utah. Blooms May–June.	BSS	Known
Jane's globemallow (<i>Sphaeralcea janeae</i>)	Found in salt desert shrub communities on the Organ Rock and White Rim members of the Cutler Formation at elevations of 4,000 to 4,600 feet. Blooms May–July.	BSS	Known
Ute ladies'-tresses (<i>Spiranthes diluvialis</i>)	Found in wet meadows, marshes, abandoned oxbow meanders, springs, lakes, and along streambanks at elevations below 7,000 feet in Utah.	FT	Potential

Source: BLM (2012); Smith (2023); USFWS (2023).

* BSS = BLM special status species, FSS = USDA Forest Service sensitive species, FT = federally listed threatened species.

3.4.4.1.5. Seed and Plant Collection

Private individuals may generally collect seeds and plants with appropriate authorization. The public may collect seed on BLM-administered lands during non-drought years from a seed source that has been verified as being in good vegetative condition (e.g., vigor and viable seed). Popular species for seed collection include fourwing saltbush (*Atriplex canescens*), globemallow (*Sphaeralcea* spp.), rabbitbrush (*Chrysothamnus* spp.), winterfat (*Krascheninnikovia lanata*), and needle-and-thread grass (*Hesperostipa comata*). For seed, collectors are charged 10% of market value on BLM-administered lands and \$20 or more per permit depending on processing costs on NFS lands. The BLM and USDA Forest Service also have native seed collections to develop seed sources and native plant materials for revegetation and restoration efforts. Seeds of Success is a national native seed collection program, led by the BLM in partnership with a variety of federal agencies and other non-federal organizations. The mission of Seeds of Success is to collect wildland native seed for ecosystem restoration, research development, and conservation (BLM 2022). Seed and plant collection may also occur, under a permit, for scientific research. Seed, firewood, and pine nut collection are becoming more popular and are expected to experience an increase in demand on NFS lands only.

3.4.4.2. ENVIRONMENTAL CONSEQUENCES

3.4.4.2.1. Issues

- How would existing and proposed management prescriptions (such as those made for livestock grazing, recreation, and lands and realty actions) and discretionary uses affect terrestrial vegetation, including special status plant species?
- How would existing and proposed vegetation management affect terrestrial vegetation and special status plant species?

3.4.4.2.2. Impacts Common to All Alternatives

Under all alternatives, actions would incorporate collaboration with the BEC and Tribal Nations to manage terrestrial vegetation. This includes incorporating Traditional Indigenous Knowledge in managing plants and plant communities, controlling invasive and nonnative plants, reducing fuels, protecting BENM objects, and moving vegetation toward desired states as determined by agencies and the BEC. Collaboration with the BEC would likely result in more management of culturally important species and communities as well as more holistic, ecologically minded approaches to vegetation management. Additionally, incorporating Indigenous vegetation management techniques may allow for various types of vegetation management not often considered under typical Western management. Studies that address impacts from management actions to the plant species specifically identified in Proclamation 10285 are not readily available. As a result, for this analysis, the impacts to those species are assumed to be the same as those described for vegetation and special status species overall.

Livestock Grazing

Livestock grazing is permitted by permit holders under all alternatives, with a requirement to retire lands from grazing if the livestock grazing permits or leases covering those lands are voluntarily relinquished by the permit holders. Grazing and trampling by grazers can reduce vegetation productivity by causing soil compaction or erosion, and by damaging native seedlings and adult plants (Duniway et al. 2018; Guenther et al. 2004; Jones et al. 2009). Grazing can also cause community-wide changes through increasing the spread of invasive plants, altering fuel loads, and changing species composition (Bartos et al. 2001; Barker et al. 1989).

In aspen-conifer communities, livestock and wildlife grazing can lead to a reduction in fine surface fuels and can reduce the occurrence of fires in these forest types. Aspen are a fire-dependent species, and the health of aspen forests depends on infrequent, moderate-intensity fires (Jones and DeByle 1985). The reduction in surface fires associated with grazing can lead to fire exclusion in aspen forests and may increase the opportunity for conifer encroachment and allowing for successional change from aspen to conifer forest (Bartos et al. 2001). Additionally, invasive species introduced through grazing can also cause an increase in the fire return interval in certain vegetation community types. Increased fires in communities such as sagebrush, which do not typically see frequent fire, can lead to turnover in community types, often resulting in dominance of invasive species.

Grazing can also alter species composition in shrublands and grasslands by reducing the cover of perennial grasses and forbs and increasing the cover of woody species (Barker 1989). Additionally, grazing can be particularly damaging to riparian ecosystems, altering the vegetation community through plant consumption, nutrient addition, trampling, spreading invasives, and reducing water quality (Kauffman & Krueger 1984; Jones et al. 2022).

All alternatives include management direction to mitigate the risks of the impacts of grazing and to emphasize sustainable, healthy rangelands. Management direction would ensure that grazing is managed to meet BLM standards for rangeland health in a manner that is consistent with the protection of BENM objects, such as the plant species identified in Proclamation 10285. Based on this direction, livestock grazing may have a neutral effect on the terrestrial vegetation conditions; however, there is potential for site-specific impacts to occur, especially in aspen, shrublands, and riparian areas.

Table 3-25 summarizes the number of acres of each ecological site group that would be unavailable for livestock grazing under all alternatives.

Wildlife Management

All management alternatives include seasonal closures for roosting, hibernating, or breeding of sensitive species. These closures may limit vegetation management in certain areas at certain times of the year, potentially requiring treatments (such as invasives management or revegetation) during less ideal times, potentially resulting in less effective treatments and the need for multiple treatments.

Fuels and Fire

Prescribed fire would be used under specific weather and wind conditions to remove plant biomass. Prescribed fire can help move plant communities toward desired conditions by improving seed bed conditions and facilitating desired vegetation establishment. Additionally, in areas with high invasive annual grass cover, prescribed fire could reduce plant cover and reduce the invasive seed bank. Or conversely, prescribed fire in areas with high invasive annual grass (i.e., cheatgrass) cover could favor expansion and dominance of these invasive annual grasses by reducing competitive interactions with other plants and creating an environment conducive for annual grass and other invasive plant establishment, growth, and dominance. Removing aboveground biomass can allow for higher competitive ability for perennial grasses and forbs by freeing resources for growth (Monsen et al. 2004); however, in some types of vegetation in BENM, prescribed fire is not an appropriate treatment until pre-fire mechanical fuels thinning is conducted as fire conditions may become too intense for post-fire vegetative regeneration. Additionally, prescribed fire would not be used in areas known to be highly susceptible to post-fire cheatgrass or other invasive species invasion. See Section 3.5.4 for more information on prescribed fire and its effects on vegetation and fuels.

During prescribed burning, known occurrences of special status plants would be avoided unless the species is fire adapted. Prescribed fires can kill undetected individual seeds in the upper soil layers. Many species of special status plants occur in unique soils or topography that are easy to identify and avoid. Prescribed fire during the active growth period would be most damaging to undetected special status plant species, but treatments would most likely occur when plants are dormant, thereby reducing potential for damage to live plants.

All alternatives would prioritize ESR and restoration following wildfires to protect and sustain natural resources including vegetation and vegetation communities.

Forestry and Woodlands

The goals of forestry and woodlands management under all alternatives are to promote continued health, diversity, and resiliency of forest structural stages, including old growth forests such as ponderosa pine, Engelmann spruce, and subalpine fir mentioned in Proclamation 10285.

Water Resources

All alternatives must manage riparian and wetland resources for PFCs and aim to maintain and enhance water quality in the Decision Area. Vegetation treatments that result in increased erosion as described below would be limited in areas adjacent to waterways to reduce impacts to these resources.

Recreation, Transportation, and Special Designations

Under all alternatives, various types of recreation would occur throughout the Monument, which could impact vegetation and special status and culturally important species. Development of new

roads, as well as development and maintenance of trails and facilities, could result in the removal of vegetation, increased erosion, and the introduction of invasive species via new transportation corridors as seeds travel on tires and undercarriages and attach to clothing, shoes, and outdoor gear. OHVs can spread invasive plants, cause soil compaction, and cover vegetation with dust, affecting plants' ability to photosynthesize (Ouren et al. 2007). Limiting OHV use to designated routes helps confine these impacts to high-use areas and can reduce how widespread these impacts are; however, the introduction of invasive plants and dust emission impacts on vegetation can still occur in OHV limited areas. Areas that are designated as OHV closed do not have these impacts from OHVs to vegetation. No areas are designated as OHV open, which greatly reduces the spatial impact of OHV use to vegetation.

Allowing for and managing for more recreation may increase the potential for landscape-wide and smaller-scale changes to vegetation; increased human presence increases the potential for unintentional ignition of fires, which can cause large-scale changes to vegetation, while other recreation activities, such as the development of facilities, would result in smaller-scale changes such as vegetation removal in a small area. BENM would manage impacts resulting in landscape-wide vegetation changes under all alternatives. Additionally, adverse effects on vegetation could be most prominent in areas of higher recreation such as in SRMAs or ERMAs or more easily accessed areas. Designation as SRMAs or ERMAs does not specifically direct vegetation management in the area; however, these designations can result in increases in the concentration of recreation in certain areas, which may have impacts to vegetation in these areas (resulting from vegetation trampling, removal, and spread of invasives from visitors). These designations could prevent impacts from dispersed recreation elsewhere in BENM, however, reducing impacts to vegetation in these areas. Furthermore, SRMAs tend to have more prescriptive management of recreation including more rules and guidelines, which could limit or control activities through specialized management tools such as designated campgrounds, permits, and area closures.

Table 3-26 summarizes the number of acres of each ecological site group that would be designated as OHV closed and limited to designated routes under all alternatives.

Visual Resources

Areas designated as WSAs would need to meet VRM Class I objectives, which minimize the amount of disturbance in those areas. This could mean there would be fewer allowable vegetation treatments or treatments on a small scale in these areas, which could benefit vegetation in the short term (due to lack of disturbance) but may result in lower quality vegetation conditions in the long term.

Lands and Realty

All alternatives allow for varying levels of ROW development. ROW development can cause removal of vegetation, soil compaction which reduces soil function and plant health, heightened introduction of invasive species during construction, heightened use of ROW areas, and fugitive dust that can impair vegetation's photosynthetic ability.

These impacts to vegetation would not occur in areas managed as ROW exclusions. ROW avoidance areas may allow for ROW development and the impacts associated with that but may also provide enhanced protection as these areas are protected from development unless no other alternatives are available. ROW exclusion areas offer greater protections for vegetation than do ROW avoidance areas as they completely prohibit surface-disturbing activities. Under all alternatives existing designated corridors would be retained and no new corridors would be designated.

Table 3-27 summarizes the number of acres of ecological site groups that would be in each type of ROW allocation under all alternatives.

Vegetation Management

All alternatives would use collaboration with the BEC to identify treatment priorities, incorporate Traditional Indigenous Knowledge, control the spread of invasive and nonnative plants, and enhance and protect culturally important plants and plant habitat. Additionally, vegetation management timing and activities would account for life history requirements for resident and migratory birds and would enhance and/or restore habitat of native wildlife species.

All alternatives would allow for the use of manual treatments to selectively cut, clear, remove, or prune vegetation. These manual treatments would directly remove or modify target vegetation, managing the structural and functional components of reducing cover of target species or altering species composition. Manual treatments would occur in areas where mechanical equipment use would be unfeasible or prohibited. Manual treatments have less potential to damage or kill non-target vegetation than other methods such as mechanical or chemical treatments or prescribed fire. Additionally, manual treatments have smaller footprints on the overall landscape as they do not compact or move soils and are less likely to introduce invasive species.

Impacts from manual treatments on special status plant species would be similar to those described above. Because manual treatments allow for selective vegetation removal, impacts would be of low intensity with low vegetation and soil disturbance.

Mechanical treatments would remove vegetation and prepare and sow seeds in areas where allowed and feasible. Existing vegetation in the treatment area would be reduced and the soil surface would be disturbed during treatments. Vegetation removal would be conducted by motorized vehicles such as mowers, masticators, disk plows, and harrows and imprinters. The intensity of these effects may be greater than manual treatments because mechanical treatments would generally result in surface disturbance and vegetation removal over a larger area by heavier and more unwieldy devices. The ability to treat a larger area may mean that more vegetation could be moved toward desired conditions than manual treatments.

The effects from specific mechanical treatment types are described below:

- *Tilling* would effectively remove vegetation in the short term by uprooting and burying it, creating an unvegetated area. Relative to other mechanical methods, tilling would result in the most disturbance to vegetation in the short term. This method is most suited for situations where complete vegetation removal is desired, and it is generally used in conjunction with other treatments, such as chemical treatments. For example, post-tilling chemical treatments would reduce germination of invasive plants or fire-prone vegetation that has germinated in the treatment area. Tilling in areas where invasive plants are present without follow-up chemical treatment would increase the potential for long-term increases in invasive plant cover (Zouhar 2003) both in the treatment area and in adjacent vegetation, so conducting joint treatments is recommended.
- *Mowing* would cut herbaceous and woody vegetation above the ground surface. It would reduce fuels loads in the short term, lowering flame length and reducing rates of fire spread. Like other mechanical treatments, mowing could increase the potential for release of both desired perennial grasses and forbs (Monsen et al. 2004) and invasive annual grasses (Davies 2011) that are present in the shrub or pinyon-juniper understory. However, the amount of surface disturbance would be reduced compared to tilling or harrowing, which may decrease the potential for invasive annual grass growth compared to other

mechanical treatments. As described above, follow-up chemical treatments would generally be used to reduce germination or spread of invasive plants or fire-prone vegetation.

- *Drilling* would reintroduce seeds to disturbed or burned areas to help facilitate vegetation recovery. Drilling is often a more successful seeding method than aerial broadcast seeding and can result in reduced cover of invasive plants and reduced erosion, although success in arid climates is variable (Pyke et al. 2013). The large machines used for drilling may result in soil compaction and increased erosion in the short term.
- *Mastication* would reduce the size of vegetation and downed material through grinding, shredding, chunking, or chopping. This is often used to reduce fuel loads, reduce ladder fuels, reduce vegetation competition, and increase organic matter content of soils. As mastication is conducted by heavy machinery, it may also result in soil compaction, and the spread of invasive plants (Jain et al. 2018).

Revegetation using seeds and seedlings would change the structural and functional components of vegetation in the long term. Revegetation and seeding could increase the cover of desired species and could reduce invasive annual grass germination. This would help reduce ecosystem degradation in the long term.

Various types of seeding treatments would be used in conjunction with mechanical and other treatments. Short-term effects on existing vegetation from seeding are localized, damaged, or destroyed vegetation and surface disturbance from motorized vehicles or machinery. In the long term, seeding treatments could increase the percent cover of desired vegetation and help to move vegetation toward desired conditions. In some cases, seeded species may spread into adjacent vegetation (McArthur et al. 1990; Ott et al. 2017), altering the species composition of these areas. The seeding method (e.g., drill seeding vs. broadcast seeding), species being seeded, and existing vegetation condition would all impact the intensity of this species spread.

Overall, revegetation could move plant community structure and function toward desired conditions by increasing diversity, nutrient and hydrologic cycling, and plant vigor. This would promote maintenance of a more competitive plant community and reduce the threat of invasion. Over time, this could also reduce available fuels, aid in restoring natural burn patterns, restore a more natural fire return interval, and aid in increasing the resistance and resilience of treated areas.

Chemical treatments are another type of vegetation management that can be used to remove target plants, decrease target plant growth, and/or reduce seed production. This can aid native or desirable species in their re-establishment where vegetation modification is desired. Potential impacts on non-target vegetation include death, reduced productivity, and abnormal growth from unintended contact with chemicals via drift, runoff, wind transport, or accidental spills and direct spraying. The degree of impacts depends on the chemical used and its properties, such as persistence, the application rate, the treatment method, the physical site conditions, and the weather, such as wind or rain, during treatments (BLM 2007:4–47). These effects would generally be limited to the short term during and immediately following treatments, and following standard operating procedures (BLM 2007:Table 2-8) and mitigation measures (BLM 2016:Table 2-5) would prevent impacts or reduce impact intensity.

Chemical treatments would be unlikely to directly affect special status plants due to implementation of standard operating procedures (BLM 2007:Table 2-8) and mitigation measures (BLM 2016:Table 2-5). Potential impacts to undetected special status plants and seed banks would be the same as described above for general vegetation. They would depend on the active ingredient and application method.

Special Status Species

Federally listed species would be protected according to the ESA across all alternatives. This would provide enhanced protection for these species and would support their continued existence in BENM. No management action would be permitted that would jeopardize the continued existence of species that are listed, proposed for listing, or candidates for listing under the ESA. Additionally, all alternatives would maintain, protect, and enhance habitat of listed threatened, endangered, or candidate species, BLM special status species, USDA Forest Service sensitive species, species of conservation concern (SCC), and species of cultural importance to Tribal Nations to promote recovery and prevent listing under the ESA and would conduct regular inventories of these species.

All management alternatives would incorporate Tribal and statewide conservation strategies in coordination with UDWR and USFWS including identifying special status species of cultural priority to each Tribe of the BEC and develop a plan for protecting these species. Habitat treatments would be coordinated with the BEC and agency resource programs to ensure consistency with protecting BENM objects. Additionally, traditional use gathering of special status species plants would be managed through permit in collaboration with the BEC, for example, notification of use through a point of contact.

Species that occupy habitats that are often disturbed (such as roadsides, wood product harvest, and high recreation use areas) would be vulnerable to removal of individuals. Various surface-disturbing activities, including vegetation management, OHV use, and facility and ROW construction can directly affect habitats for special status species. Additionally, recreation, fire, and livestock use can result in the removal or destruction of vegetation or habitat, resulting in adverse impacts to sensitive or at-risk species.

Activities such as grazing, surface-disturbance, and increased recreation can indirectly affect special status species by introducing and transporting invasive species. The spread of invasive species can have proportionately larger impacts to special status species that typically have already limited populations and distributions. Surface disturbance can also result in habitat fragmentation, isolating populations of special status plant species, and reducing gene flow among populations. Management goals and directives under all alternatives would minimize these adverse impacts from surface disturbance to special status species.

The protection of special status species and their habitats would be considered and implemented prior to implementation of management actions, and no management action would be permitted that would jeopardize the existence of listed, proposed, or candidate species under the ESA; however, impacts from specific mechanical treatment methods could occur to undetected special status plant species. Plant mortality and seed burial are likely to occur where there is deep soil surface disruption (such as from tilling and seeding/planting). This destruction of special status plant seed banks would be particularly harmful to species with seeds that remain viable in the soil for long periods of time before germinating.

Impacts to special status plant species from revegetation would be like those described for general vegetation above. Short-term impacts from the use of tools to implement revegetation are described under treatment-specific sections and would mainly apply to undetected special status species, seed banks, and pollinators. Special status plants would likely benefit from long-term alterations to the surrounding vegetation community. Movement toward desired vegetation states would increase biological and structural diversity. These changes would reduce threats to special status plant species (including those occurring in areas adjacent to treatment areas), such as potential loss of populations and habitat to wildfire and competition with invasive species, thereby

aiding in recovery. They would also improve conditions for pollinators, thereby increasing pollination opportunities for special status plants.

Table 3-25 summarizes the number of acres of each ecological site group that would be unavailable for livestock grazing under all alternatives. Table 3-26 summarizes the number of acres of each ecological site group that would be closed to OHV travel and limited to designated routes under all alternatives. Table 3-26 summarizes the number of acres of ecological site groups that would be in each type of ROW allocation under all alternatives.

Table 3-25. Ecological Site Groups Unavailable for Grazing under Each Alternative

Ecological Site Group	Alternative A (acres)	Alternatives B, C, and E (acres)	Alternative D (acres)
Arid Warm – Breaks	5,521	6,646	10,254
Arid Warm – Deep Rocky	197	290	597
Arid Warm – Finer Uplands, Clay Uplands	0	0	94
Arid Warm – Gypsum	2	2	175
Arid Warm – Saline Bottoms, Bottoms	1	1	1,120
Arid Warm – Saline Hills	1	2	62
Arid Warm – Saline Uplands	125	135	541
Arid Warm – Sandy Bottoms	820	891	4,462
Arid Warm – Sandy Uplands, Loamy Uplands	10,157	11,045	88,908
Arid Warm – Shallow	18,518	20,020	41,988
Arid Warm – Very Shallow	14,491	19,673	56,151
Outcrops	1,118	2,435	7,615
Riparian	1,738	2,111	2,544
Semiarid Cool – Bottoms	0	0	0
Semiarid Cool – Breaks	173	473	1,346
Semiarid Cool – Clay Uplands	0	0	0
Semiarid Cool – Deep Rocky	55	227	330
Semiarid Cool – Saline Hills	0	0	0
Semiarid Cool – Saline Uplands, Sandy Uplands, Loamy Uplands, Finer Uplands	10	14	98
Semiarid Cool – Sandy Bottoms	0	1	2
Semiarid Cool – Shallow	68	202	602
Semiarid Cool – Very Shallow	2	14	30
Semiarid Warm – Breaks	22,227	26,137	33,518
Semiarid Warm – Clay Uplands	2	2	5
Semiarid Warm – Finer Uplands	1,591	1,711	4,516
Semiarid Warm – Gypsum	0	0	0

Ecological Site Group	Alternative A (acres)	Alternatives B, C, and E (acres)	Alternative D (acres)
Semiarid Warm – Saline Bottoms	2	2	118
Semiarid Warm – Saline Hills	0	6	27
Semiarid Warm – Saline Uplands	160	163	178
Semiarid Warm – Sandy Bottoms, Bottoms	1,140	1,612	2,797
Semiarid Warm – Sandy Uplands, Loamy Uplands	4,781	6,092	16,686
Semiarid Warm – Shallow, Deep Rocky	31,508	35,587	48,552
Semiarid Warm – Very Shallow	20,573	27,401	35,330
Total Acres	134,984	162,895	358,648

Note: Ecological site groups are only measured on BLM-administered lands, so acreages in table are less than the total acreage under each management alternative.

Table 3-26. Ecological Site Groups Off-Highway Vehicle Closed or Off-Highway Vehicle Limited under Each Alternative

Ecological Site Group	Alternative A (acres)		Alternative B (acres)		Alternative C (acres)		Alternative D (acres)		Alternative E (acres)	
	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited
Arid Warm – Breaks	8,366	15,313	8,366	15,313	12,367	11,312	17,298	6,381	8,369	15,309
Arid Warm – Deep Rocky	390	1,378	390	1,378	486	1,282	765	1,004	395	1,373
Arid Warm – Finer Uplands, Clay Uplands	135	35	135	305	135	35	144	26	135	35
Arid Warm – Gypsum	47	850	47	850	59	839	407	490	47	850
Arid Warm – Saline Bottoms, Bottoms	25	1,566	25	1,566	25	1,566	273	1,318	25	1,566
Arid Warm – Saline Hills	19	368	19	368	23	364	74	313	19	368
Arid Warm – Saline Uplands	423	2,338	423	2,338	731	2,029	1,452	1,309	423	2,338
Arid Warm – Sandy Bottoms	2,526	8,864	2,526	850	3,174	8,216	7,450	3,940	2,531	8,859

Ecological Site Group	Alternative A (acres)		Alternative B (acres)		Alternative C (acres)		Alternative D (acres)		Alternative E (acres)	
	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited
Arid Warm – Sandy Uplands, Loamy Uplands	115,796	167,978	115,796	8,864	149,634	134,141	234,567	49,208	115,822	167,952
Arid Warm – Shallow	55,400	61,389	55,400	167,978	70,374	46,415	95,882	20,906	55,414	61,375
Arid Warm – Very Shallow	46,390	100,980	46,390	61,389	68,272	79,100	109,831	37,540	46,409	100,961
Outcrops	10,573	11,282	11,002	100,980	12,503	9,353	18,773	3,082	11,004	10,852
Riparian	2,051	3,453	3,406	10,854	3,462	2,042	3,936	1,568	3,518	1,986
Semiarid Cool – Bottoms	0	30	1	29	1	29	1	29	1	29
Semiarid Cool – Breaks	483	11,795	8,947	3,331	8,947	3,331	8,943	3,335	8,947	3,331
Semiarid Cool – Clay Uplands	0	9	0	9	0	9	0	9	0	9
Semiarid Cool – Deep Rocky	170	15,855	9,108	6,918	9,108	6,918	9,095	6,930	9,108	6,918
Semiarid Cool – Saline Hills	0	4	0	4	0	4	0	4	0	4
Semiarid Cool – Saline Uplands, Sandy Uplands, Loamy Uplands, Finer Uplands	23	11,931	1,197	10,757	1,197	10,757	1,197	10,757	1,197	10,757
Semiarid Cool – Sandy Bottoms	2	7	8	0	8	0	8	0	8	0
Semiarid Cool – Shallow	234	33,404	9,436	24,202	9,436	24,202	9,435	24,202	9,436	24,202
Semiarid Cool – Very Shallow	22	422	268	176	268	176	268	176	268	176
Semiarid Warm – Breaks	24,980	49,447	46,586	27,841	48,107	26,320	59,904	14,523	47,786	26,641
Semiarid Warm – Clay Uplands	5	309	53	261	53	261	54	260	53	261

Ecological Site Group	Alternative A (acres)		Alternative B (acres)		Alternative C (acres)		Alternative D (acres)		Alternative E (acres)	
	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited	OHV Closed	OHV Limited
Semiarid Warm - Finer Uplands	13,384	54,431	19,404	48,412	20,046	47,770	33,623	34,195	19,404	48,411
Semiarid Warm - Gypsum	0	50	0	50	0	50	4	46	0	50
Semiarid Warm - Saline Bottoms	35	173	35	173	35	173	96	112	35	173
Semiarid Warm - Saline Hills	7	81	7	81	7	81	25	63	7	81
Semiarid Warm - Saline Uplands	170	1,001	170	1,001	171	1,000	551	620	170	1,001
Semiarid Warm - Sandy Bottoms, Bottoms	2,451	5,192	3,243	4,400	3,285	4,358	5,529	2,114	3,316	4,327
Semiarid Warm - Sandy Uplands, Loamy Uplands	40,295	82,151	44,585	77,861	46,128	76,318	84,161	38,286	57,719	81,936
Semiarid Warm - Shallow, Deep Rocky	67,396	184,128	118,608	132,908	128,107	123,408	174,034	77,482	44,821	77,625
Semiarid Warm - Very Shallow	44,019	95,635	56,909	82,746	63,733	4,358	100,608	39,046	119,446	132,069
Total Acres	435,817	921,848	562,489	795,196	659,881	697,777	978,388	379,271	565,832	791,826

Note: Ecological site groups are only measured on BLM-administered lands, so acreages in table are less than the total acreage under each management alternative.

Table 3-27. Ecological Site Groups in Right-of-Way Avoidance, Right-of-Way Exclusion, and Open to Right-of-Way under Each Alternative

Ecological Site Groups	Alternative A (acres)			Alternative B (acres)			Alternative C (acres)			Alternative D (acres)		Alternative E (acres)	
	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion	
Arid Warm - Breaks	4,296	8,390	10,989	15,424	8,224	26	11,415	12,260	6,211	17,463	141	23,534	
Arid Warm - Deep Rocky	349	336	1,084	1,407	338	24	1,316	452	1,005	763	43	1,726	

Ecological Site Groups	Alternative A (acres)			Alternative B (acres)			Alternative C (acres)		Alternative D (acres)		Alternative E (acres)	
	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion
Arid Warm – Finer Uplands, Clay Uplands	6	135	29	33	135	2	35	135	26	144	3	167
Arid Warm – Gypsum	232	169	497	706	173	19	712	186	505	393	57	841
Arid Warm – Saline Bottoms, Bottoms	330	7	1,253	1,465	8	118	1,529	61	1,264	327	132	1,459
Arid Warm – Saline Hills	220	15	152	366	16	5	365	22	312	75	18	369
Arid Warm – Saline Uplands	715	332	1,715	2,423	326	12	2,057	705	1,312	1,449	33	2,729
Arid Warm – Sandy Bottoms	2,871	2,237	6,294	9,032	2,296	74	8,386	3,017	4,086	7,316	327	11,076
Arid Warm – Sandy Uplands, Loamy Uplands	38,651	128,127	116,980	152,535	129,121	2,103	120,530	163,229	48,461	235,298	5,312	278,447
Arid Warm – Shallow	18,749	60,434	37,573	55,845	60,716	195	40,889	75,867	21,327	95,429	812	115,994
Arid Warm – Very Shallow	23,112	44,622	79,612	100,296	46,563	487	78,358	68,987	37,922	109,424	1,766	145,580
Outcrops	5,629	10,586	5,638	11,257	10,583	13	9,750	12,103	3,723	18,129	567	21,286
Riparian	1,389	1,962	2,150	3,451	1,917	134	3,391	2,111	2,921	2,581	1,989	3,513
Semiarid Cool – Bottoms	0	0	30	30	0	0	30	0	30	0	30	0
Semiarid Cool – Breaks	498	482	11,298	11,795	483	0	11,795	483	11,796	482	11,631	647
Semiarid Cool – Clay Uplands	0	0	9	9	0	0	9	0	9	0	7	2
Semiarid Cool – Deep Rocky	1,652	160	14,214	15,855	170	0	15,855	170	15,866	160	15,541	484
Semiarid Cool – Saline Hills	0	0	4	4	0	0	4	0	4	0	4	0

Ecological Site Groups	Alternative A (acres)			Alternative B (acres)			Alternative C (acres)		Alternative D (acres)		Alternative E (acres)	
	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion
Semiarid Cool – Saline Uplands, Sandy Uplands, Loamy Uplands, Finer Uplands	1,794	23	10,138	11,931	23	0	11,931	23	11,931	23	11,284	670
Semiarid Cool – Sandy Bottoms	0	2	7	7	2	0	7	2	7	2	7	2
Semiarid Cool – Shallow	4,335	234	29,069	33,404	234	0	33,404	234	33,404	234	32,283	1,355
Semiarid Cool – Very Shallow	17	22	405	422	22	0	422	22	422	22	420	24
Semiarid Warm – Breaks	9,801	24,979	39,651	49,302	24,980	149	47,930	26,501	37,324	37,109	29,100	45,332
Semiarid Warm – Clay Uplands	3	4	307	309	5	0	309	5	309	5	229	85
Semiarid Warm – Finer Uplands	9,709	13,269	44,824	54,234	13,358	209	53,802	14,000	40,117	27,685	16,864	50,938
Semiarid Warm – Gypsum	1	0	49	45	0	5	50	0	46	4	6	44
Semiarid Warm – Saline Bottoms	5	35	168	0	35	0	173	35	112	96	0	208
Semiarid Warm – Saline Hills	0	7	81	77	7	3	81	7	63	25	7	81
Semiarid Warm – Saline Uplands	46	118	1,007	1,044	126	2	1,045	127	620	551	3	1,168
Semiarid Warm – Sandy Bottoms, Bottoms	680	2,439	4,524	5,131	2,450	62	5,151	2,491	2,914	4,729	1,491	6,151
Semiarid Warm – Sandy Uplands, Loamy Uplands	8,099	40,141	74,193	81,371	40,271	792	80,620	41,813	42,640	79,794	11,988	110,446

Ecological Site Groups	Alternative A (acres)			Alternative B (acres)			Alternative C (acres)		Alternative D (acres)		Alternative E (acres)	
	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	Open to ROW	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion	ROW Avoidance	ROW Exclusion
Semiarid Warm - Shallow, Deep Rocky	34,397	66,826	150,314	183,482	67,301	754	174,736	76,801	129,558	121,992	92,785	158,761
Semiarid Warm - Very Shallow	12,530	43,047	84,053	95,839	43,504	288	89,303	50,327	52,709	86,923	18,322	121,309
Total	180,115	449,139	728,309	898,702	453,386	5,476	805,386	552,177	508,955	848,628	235,202	1,104,376

Note: Ecological site groups are only measured on BLM-administered lands, so acreages in table are less than the total acreage under each management alternative.

3.4.4.2.3. Impacts under Alternative A

Under Alternative A, current management of terrestrial vegetation would continue under the 2020 ROD/MMPs, the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP, as amended. The condition and trends for vegetation as summarized in the affected environment would be expected to continue along similar trajectories. Alternative A allows for continuing existing land management practices and acreages for ROWs, grazing, recreation and OHV use, special designation areas, hazardous fuels treatments and fire suppression and prescription, and vegetation management. Alternative A would manage uses to provide for high levels of vegetative diversity and productivity while continuing to prioritize commercial and private use of the Monument such as timber, and wood products (for more details, see Section 3.4.6, Forestry and Woodlands).

Wood product removal, rangeland improvement, habitat enhancement, and fuels reduction projects would likely still occur under the individual and relevant RMPs. These individual projects could potentially reduce habitat loss from fire and move vegetation communities toward desired conditions by improving plant community structure and diversity; however, the lack of cohesive, landscape-wide planning could result in bogged-down project planning and implementation, as well as landscape-scale deterioration of vegetative resources including impacts to sagebrush, aspen, old growth forests, special status species including the Kachina daisy, and culturally important species.

Livestock Grazing

Under Alternative A, 1,223,820 acres would be available for grazing (90% of the total acreage). In these areas, vegetation would continue to be impacted by grazing as described in Section 3.4.4.5.2. The number of acres of each ecological site group that would be unavailable for livestock grazing under Alternative A is summarized in Table 3-25. The Semiarid Warm – Breaks and Semiarid Warm – Shallow, Deep Rocky are the ecological site groups that contain the most acres that would be unavailable for livestock grazing. These ecological site groups are susceptible to invasion by cheatgrass and annual forbs; therefore, making them unavailable to livestock grazing would help reduce these issues and would help move vegetation toward desired conditions and increase resiliency. Additionally, Alternative A provides a method for retiring permits from grazing for permits that are voluntarily relinquished by the holder and stipulates that forage shall not be reallocated for grazing. This would help reduce stress on terrestrial resources, especially in drought years and could help maintain or move vegetation toward desired conditions and increase ecosystem resiliency.

Fuels and Fire

Under Alternative A, all available methods would be allowed to be used to fight wildfires, including large-scale mechanical methods. While these may be more effective at limiting the size and severity of fire, these methods may be extremely detrimental to vegetation and long-term impacts (such as vegetation removal, increased erosion, soil compaction) from firefighting methodologies could result.

Forestry and Woodlands

Under Alternative A, BLM-administered lands would allow wood product harvest in areas approved for fuels treatment or habitat treatment projects and areas open for wood product collection which comprise 715,667 total acres open to wood product harvest (52% of the total acreage). Wood collection in these areas can remove beneficial vegetation and litter cover to reduce ecosystem function, but it may also help reduce fuel loads, reducing the risk of uncharacteristic wildfire.

Alternative A would continue to allow clearcuts on any forest cover type with potential for impact from, or that have been impacted by, insects or disease, which would allow for increased erosion, introduction and spread of invasive species, and monoculture regrowth.

Recreation, Transportation, and Special Designations

The number of acres of each ecological site group that would be closed to OHV travel and limited to designated routes under Alternative A is summarized in Table 3-26. Approximately 436,075 acres would continue to be closed to OHV travel (29% of total acreage), and OHV travel would be limited to designated routes in 928,080 acres. These closures and limitations would continue to provide protection to vegetation communities and special status plant species by reducing impacts from dust and weed vectors.

The ERMA and SRMA under Alternative A are quite varied in terms of accessibility, types of prescriptive actions to manage visitor use, and types of recreation activities. Alternative A recognizes that regulation and limits to recreation are necessary but would attempt to make these limitations as minimal as possible which would include keeping most recreational opportunities open to the greatest extent possible. Additionally, Alternative A would strive to locate recreational activities near population centers and highway corridors as well as direct recreation to more concentrated areas. Adverse effects on vegetation such as trampling and invasive species establishment and spread could be most prominent in these areas of concentrated recreation but may also result in fewer dispersed impacts to vegetation throughout the Monument. Under Alternative A, there would be 48,954 acres of LWC that are managed to prioritize the protection of wilderness characteristics and an additional 416,288 acres as ACECs, WSAs, or WSRs. Many mechanical treatments are prohibited in these special designation areas, which would allow for protection from disturbance in the short term, but possibly allow for buildup of fuel loads in these areas potentially causing uncharacteristic fire intervals and fire intensities.

Visual Resources

Under Alternative A, 411,245 acres (38% of the BLM portion of BENM) would be managed as VRM Class I and 304,949 acres (28%) of BENM would be managed as VRM Class II. These areas of the Monument would be managed to preserve the natural character of the landscape, which would help reduce large-scale changes to vegetation. Under Alternative A, 143,845 acres (13%) would be managed as VRM Class IV, where management activities could dominate the view and be the major focus for viewers. In these areas, surface-disturbing activities that impact vegetation could occur.

Lands and Realty

Approximately 449,283 acres would continue to be in ROW exclusion areas under Alternative A, 180,329 acres in ROW avoidance areas, and 734,447 acres would be open to ROW authorization (see Table 3-27). Vegetation communities and special status plant species in the exclusion areas would continue to be protected by a reduction in surface-disturbing activities that impact vegetation as described in Section 3.4.4.5.2; however, the vegetation in the areas open to ROW authorization would be vulnerable to impacts as discussed in Section 3.4.4.5.2, and areas in ROW avoidance areas could also potentially be subject to these impacts.

Vegetation Management

Under Alternative A, vegetation management would continue using all available tools, including chaining, to treat vegetation, harvest timber, and seed plants, and to reduce fuels. Chaining is a vegetation management technique that uses a large chain dragged between two bulldozers to rip

vegetation out of the ground. Chaining is typically used to promote forage for wildlife and livestock and to reduce fire risk. Alternative A would either maintain or increase the existing levels of vegetation management to improve VCCs. Sagebrush communities in Harts Draw, Beef Basin, and Shay Mesa would be prioritized. Greasewood in Comb Wash, Butler Wash, Indian Creek, and South and North Cottonwood Wash would be treated to improve ground cover, biodiversity, and water quality.

3.4.4.2.4. Impacts under Alternative B

Under Alternative B, vegetation management would emphasize maintaining diversity of plant functional groups, enhancing native species productivity, maintaining vegetation for Indigenous peoples' traditional and ceremonial uses, and emphasize habitat connectivity to enhance species residency. Instead of prioritizing treatments in high risk/high-value areas, treatment priorities would focus on enhancing or maintaining desirable conditions of vegetation for Indigenous peoples' traditional and ceremonial uses as well as improving VCCs. Alternative B is the alternative most similar to Alternative A but would involve more BEC coordination for identifying restoration projects and project components (e.g., seed mixes to be used).

The reduction in some uses of vegetation resources, such as timber harvest and grazing, coupled with the coordination with the BEC to identify priority areas for vegetation treatments and selecting seed mixes for restoration, would likely result in more management of culturally important species and communities, as well as more holistic, ecologically minded approaches to vegetation management than under Alternative A. More emphasis is placed on restoring historical vegetation conditions, fire return intervals, and maintaining desired VCCs. Alternative B would provide more flexibility for proactive treatment in WSAs and LWC than Alternative A, which would allow land managers to make more site-specific and targeted vegetation management decisions.

Livestock Grazing

Under Alternative B, in addition to the areas that are unavailable under Alternative A, 28,027 additional acres (an additional 2% of total acres in BENM) would be unavailable for grazing. The acres unavailable for grazing for each ecological site group under Alternative B is summarized in Table 3-25. There would be 6,222 additional acres of the Semiarid Warm – Very Shallow ecological site group unavailable for grazing under Alternative B. This group can be extremely prone to effects from drought and is highly susceptible to annual invasion, so this additional protection from grazing would protect these areas from compounding effects of drought, invasion, and grazing especially vegetation communities vulnerable to cheatgrass invasion such as sagebrush. Under Alternative B, permits voluntarily relinquished by its holder would automatically become unavailable for grazing and the lands would be managed for wildlife habitat and would allow for the full vegetative growth potential and biomass accumulation without livestock grazing pressure. Overall, it is anticipated that livestock would continue to have a neutral effect on the terrestrial vegetation condition with potential for site-specific impacts that can be effectively addressed individually as needed by land managers. Alternative B would implement an annual three-phase approach to drought management which would allow managers to adapt livestock grazing practices during drought, to potentially allow for more resource rest and fewer impacts to vegetation during these vulnerable times.

Fuels and Fire

Under Alternative B, fire suppression activities would prioritize the protection of riparian, wetland, and water resources, as well as other natural resources such as vegetation. Emphasis would be placed on maintaining functional/structural plant groups, productivity of native species, providing

healthy vegetation communities and cover types for Indigenous peoples' traditional and ceremonial uses, habitat health, and habitat connectivity (to enhance plant and wildlife resiliency to environmental change). This emphasis on vegetation health would likely result in fewer impacts to vegetation from fire suppression activities than under Alternative A. All mechanical methods, including large surface-disturbing methods such as chaining, would still be allowed under Alternative B.

Forestry and Woodlands

Under Alternative B, timber harvest would be managed to protect late successional and old growth forests, such as the Engelmann spruce and ponderosa pine forests mentioned in Proclamation 10285, and reduce detrimental soil impacts. Clearcutting would be prohibited on NFS lands except where used to regenerate aspen, reducing the impacts of this type of timber harvest as described in Impacts under Alternative A. More acres would be open to wood product harvest than under Alternative A (215,243 more acres than Alternative A), which could allow for higher rates of invasive plant establishment and spread.

Water Resources

Under Alternative B, no new discretionary actions that alter vegetation cover would be allowed within 100-year floodplains or within 300 feet of springs, riparian areas, and intermittent and perennial streams unless it does not impair overall riparian function in a system. This provides for fewer allowable vegetation treatments in these areas than under Alternative A and reduces the area in which vegetation management is allowed, which could reduce the ability to manage vegetation toward desired conditions.

Recreation, Transportation, and Special Designations

The number of acres of ecological site groups that would be designated as OHV closed, OHV limited, and OHV open under Alternative B is summarized in Table 3-26. Approximately 566,627 acres (42%) would be closed to OHV travel, 130,845 acres more than Alternative A, and OHV travel would be limited to designated routes in 797,525 acres. These closures/limitations would prevent additional routes from being designated in these areas and would provide enhanced protection to vegetation communities and special status species, including the Kachina daisy, by preventing future impacts from new road designations (such as vegetation removal, soil compaction, and spread of invasive plants) and by reducing impacts from unauthorized off-route travel. This would benefit ecological site groups that are susceptible to erosion and annual invasion and have a large proportion of acres within the Decision Area closed to OHV travel, such as Arid Warm – Sandy Uplands, Loamy Uplands, and Semiarid Warm – Shallow, Deep Rocky.

Alternative B would manage recreation with limiting or restricting public use as little as possible. Similar to Alternative A, managing for fewer high-use areas would reduce impacts to vegetation in these areas, this may mean more dispersed recreation throughout the Monument, increasing impacts to vegetation (such as weed spread and vegetation trampling) throughout those areas. Under Alternative B, 250,415 acres would be managed as wilderness or WSAs, which is the same acreage as Alternative A; however, under Alternative B, wilderness and WSAs would dictate the use of “light-on-the-land” treatments that would help reduce the impacts of mechanical treatments in those areas as described in Section 3.4.4.5.2. Alternative B would maintain existing recreation facilities and focus on developing new facilities if needed. New developments could allow for removal of vegetation and introduce invasive species to new areas, but also minimize dispersed visitor impacts on vegetation. Additionally, Alternative B would allow for seasonal closures of facilities to allow for resource rest.

Visual Resources

Alternative B would manage 194,479 fewer acres than Alternative A as VRM Class III and would have no acres managed as VRM Class IV, as opposed to the 143,845 acres under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management (such as chaining or harrowing). This would reduce the impacts of these types of treatments as discussed in Section 3.4.4.5.2, but it may require more frequent small-scale treatments of vegetation to maintain desired condition classes.

Lands and Realty

The number of acres of ecological site groups that would be in each type of ROW allocation under Alternative B is summarized in Table 3-27. Under Alternative B, 757,471 more acres would be managed as ROW avoidance areas than Alternative A, the highest of any alternative; 4,098 more acres would be managed as ROW exclusion or USDA Forest Service special use exclusion areas, the least of any action alternative. Far fewer acres (5,477 acres) would be open to ROW authorization than under Alternative A, reducing the impacts from ROW to vegetation in these areas. The most acreage in ROW exclusion areas are in ecological site groups with Shallow, Very Shallow, or Sandy/Loamy Uplands (see Table 3-27). These groups are highly prone to invasion by annual grasses and forbs, so this additional acreage protecting these areas from ROW authorizations would reduce impacts to vegetation as described in Section 3.4.4.5.2.

3.4.4.2.5. Impacts under Alternative C

Similar to Alternative A, under Alternative C vegetation management would be prioritized in high value/high-risk areas such as developed recreation facilities or areas with high visitation but would also add the priority of treatments to maintain diversity of plant functional groups, enhance native species productivity, maintain vegetation for Indigenous peoples' traditional and ceremonial uses, and emphasize habitat connectivity to enhance species residency.

Management under Alternative C is similar to management under Alternative B with a few key changes; no chaining would be allowed anywhere on the Monument, and treatments authorized in wilderness, USDA Forest Service-recommended wilderness, WSAs, and LWC that are managed to prioritize the protection of wilderness characteristics would use light-on-the-land methods. Using light-on-the-land treatments would likely result in short-term improvements in vegetation due to the lack of surface-disturbance often associated with mechanical treatments; however, this may also result in a smaller-scale vegetation treatments, requiring more treatments to bring vegetation to desired conditions.

Livestock Grazing

The number of acres of ecological site groups that would be unavailable for livestock grazing under Alternative C is summarized in Table 3-25. A total of 163,034 acres (12%) would be unavailable to livestock grazing under Alternative C, 28,027 acres more than Alternative A. The ecological site groups with the most acreage protected from grazing under Alternative C are Semiarid Warm – Shallow, Deep Rocky and Semiarid Warm – Very Shallow. These sites are highly susceptible to the effects of drought and can be easily invaded by cheatgrass and other annuals, so additional protection from grazing should help reduce these impacts in these areas and help protect vegetation communities vulnerable to cheatgrass invasion such as sagebrush. Under Alternative C, permits voluntarily relinquished by the holder would automatically become unavailable for grazing and the lands would be managed for wildlife habitat. The additional acreage of lands unavailable for grazing, would allow for the full vegetative growth potential and biomass accumulation without

livestock grazing pressure, which would be especially beneficial in areas with aspen or sagebrush. Overall, it is anticipated that livestock would continue to have a neutral effect on the terrestrial vegetation condition with potential for site-specific impacts that can be effectively addressed individually as needed by land managers. Additionally, under Alternative C, utilization levels would be identified on an allotment-specific basis, allowing for more flexibility depending on vegetation type and condition, resulting in healthier communities. Alternative C would implement an annual three-phase approach to drought management which would allow managers to adapt livestock grazing practices during drought, to potentially allow for more resource rest and fewer impacts to vegetation during these vulnerable times.

Fuels and Fire

Fuels and fire management under Alternative C would be very similar to Alternative B but places more restrictions on the type of techniques that can be used (no chaining would be permitted), allowing for reduced impacts to vegetation from these higher impact techniques. Other impacts to vegetation would be similarly different from Alternative A as those described in Section 3.4.4.2.4.

Forestry and Woodlands

Management of forests and woodlands under Alternative C would be the same as Alternative B, and the impacts to vegetation would be the same. More acres would be open to wood product harvest than under Alternative A, resulting in the higher risk of invasive plant spread and establishment.

Water Resources

Alternative C would provide the same restrictions to changes in vegetation cover as Alternative B, which would provide for fewer allowable vegetation treatments in these areas than under Alternative A and reduce the area in which vegetation management is allowed.

Recreation, Transportation, and Special Designations

The number of acres of ecological site groups that would be designated as OHV closed, OHV limited, and OHV open under Alternative C is summarized in Table 3-26. A total of 664,030 acres (48% of the total acreage) would be closed to OHV travel, 228,248 more acres than Alternative A. Under Alternative C, 700,122 acres would be designated as OHV limited. Managing more acres as closed to OHV travel rather than OHV limited areas would reduce impacts from unauthorized off-route travel and would provide enhanced protection to vegetation and special status species, such as those identified in Proclamation 10285, by preventing impacts from new roads and could help reduce impacts from unauthorized off-route travel. The ecological site groups with the most acres closed to OHV travel or OHV travel limited are Arid Warm – Sandy Uplands, Loamy Uplands and Semiarid Warm – Shallow, Deep Rocky. As mentioned previously, these areas are highly susceptible to erosion and annual invasion due to disturbance, so this additional acreage protecting these areas from OHV use would help reduce these impacts.

Compared to Alternative A, Alternative C would include less on-the-ground presence of personnel, signage, and developed facilities than Alternative A but more emphasis on permitting and off-site education, which would help reduce impacts from visitors to vegetation. Less on-the ground presence may result in increased damage to vegetation from visitors; however, increased permits and reducing group size could reduce impacts such as invasive spread and trampling. With less restriction and less direct oversight on recreation, there is also potential that less-knowledgeable users could cause an increase in the degradation of vegetation communities as compared with Alternative A. Alternative C would maintain existing recreation facilities and develop new facilities

only in cultural sites allowed for Public Use (Developed) and in RMZs near the Indian Creek Corridor, Bicentennial Highway, Trail of the Ancients and Sand Island. This restriction on the development of new facilities would reduce the amount of disturbance or removal of vegetation in those areas.

Visual Resources

Alternative C would manage 195,055 fewer acres than Alternative A as VRM Class III and would have no acres managed as VRM Class IV, as opposed to the 143,845 acres under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management; chaining would not be allowed. This would reduce the impacts of these types of treatments as discussed in Section 3.4.4.5.2, but it may require more frequent small-scale treatments of vegetation to maintain desired condition classes.

Lands and Realty

Under Alternative C, 552,278 acres would be managed as ROW exclusion areas, 102,995 more acres than Alternative A. Under Alternative C, 811,794 acres would be managed as ROW avoidance, 631,465 more acres than Alternative A. No areas would be open to ROW authorization. Compared with Alternative A, more acreage managed as ROW exclusion and no acreage managed as open to ROW would offer more protection to vegetation and special status species, such as those identified in Proclamation 10285, and reduce impacts associated with ROWs as described in Section 3.4.4.5.2. The number of acres of ecological site groups that would be in each type of ROW allocation under Alternative C is summarized in Table 3-27. The ecological site groups with the most area in ROW avoidance or exclusion zones are Arid Warm – Sandy Uplands, Loamy Uplands and Semiarid Warm – Shallow, Deep Rocky. These areas are vulnerable to disturbance and drought and prone to invasion by annuals, so the increased protection from ROW authorization in these areas would further protect them from these impacts.

3.4.4.2.6. Impacts under Alternative D

Under Alternative D, vegetation management would emphasize maintaining diversity of plant functional groups, enhancing native species productivity, maintaining vegetation for Indigenous peoples' traditional and ceremonial uses, and emphasizing habitat connectivity to enhance species residency. Instead of prioritizing treatments in high risk/high-value areas, treatment priorities would focus on enhancing or maintaining desirable conditions of vegetation for Indigenous peoples' traditional and ceremonial uses as well as improving VCCs. Alternative D prioritizes using light-on-the-land treatments throughout the Monument, as well as using traditional indigenous techniques and/or natural processes for vegetation management.

The reduction in some uses of vegetation resources, such as timber harvest, grazing, and OHV use would likely result in more management of culturally important species and communities, using more traditional indigenous vegetation management methods and passive management with an emphasis on natural processes and preserving the wilderness characteristics of the Monument. Additionally, there would likely be fewer vegetation treatments and fuels work conducted in wilderness, WSAs, USDA Forest Service–recommended wilderness, and LWC than under Alternative A, which could result in higher fuel loads as well as a reduction in impacts from treatments as described in Section 3.4.4.5.2.

The prioritization of natural processes would likely reduce the number and scale of restoration projects that use active management or heavy machinery. This could reduce the short-term direct impacts on vegetation and special status plant species as described in Section 3.4.4.5.2; however,

the reduction in these projects may also adversely impact vegetation communities and special status species in the long term. Reliance on natural processes and prohibiting the use of nonnative, non-invasive plants help increase native plant cover, leading to an increase in diversity, structure, and function of the vegetation community; however, there are some instances in which native plants have a low probability of success, and the inability to use nonnative, non-invasive plants may slow restoration and potentially allow for an increase in invasive plants or require the use of more invasive mechanical methods, increasing the necessity for multiple treatments and slowing movement toward desired conditions.

Livestock Grazing

Under Alternative D, a total of 359,201 acres (26% of total acres) would be unavailable for livestock grazing, the most of any alternative and 224,194 more acres than Alternative A. Compared with Alternative A, the additional acreage of lands unavailable for grazing would allow for the full vegetative growth potential and biomass accumulation without livestock grazing pressure. Livestock grazing would have fewer impacts to aspen-conifer communities, shrublands, and grasslands because under Alternative D, portions of these communities would be unavailable to grazing. Overall, it is anticipated that livestock would continue to have a neutral effect on the terrestrial vegetation condition with potential for site-specific impacts that can be effectively addressed individually as needed by land managers. Under Alternative D, the Arid Warm – Sandy Uplands, Loamy Uplands, and Arid Warm – Very Shallow ecological site groups would have the most acreage unavailable for grazing (see Table 3-25). These groups can be very susceptible to erosion and invasion due to drought and disturbance, so this additional acreage protecting these areas would reduce the impacts of disturbance from grazing. Alternative D also provides ways for land managers to adapt livestock grazing practices during times of drought, which would potentially allow for more resource rest and fewer impacts to vegetation during these vulnerable times. Additionally, Alternative D would require utilization levels to be determined on an allotment basis and using a utilization rate of 30% instead of 50% where utilization has not yet been determined. This site-specific determination of utilization would allow for adaptive livestock management to address on-the-ground rangeland factors with sustainable use levels to allow for the maintenance or improvement of desired conditions. In addition, Alternative D makes numerous pastures unavailable for grazing on the Indian Creek, Lockhart, Slickhorn, White Canyon, Comb Wash Allotments, Perkins North, Tank Bench-Brushy Basin, White Mesa, and Cottonwood Allotments. This would focus livestock grazing on the remaining areas/pastures available to grazing on these allotments that would reduce adaptive management opportunities to influence the timing and duration of livestock grazing. This includes limiting grazing rotations between pastures that would reduce grazing rest opportunities during the plant growing periods. A longer duration of grazing would occur in remaining available pastures because they would be grazed under the same grazing period yet with less rangelands and pastures to distribute across. These situations could alter species composition and productivity of vegetation on these rangelands.

Fuels and Fire

Fuels and fire under Alternative D would require more collaboration with the BEC than under Alternative A. This may include using more traditional indigenous methods for fire suppression and for fuels reduction as well as an increase in prescribed fire. The increase in prescribed burning would likely result in a benefit for the vegetation communities in the Decision Area that are fire dependent and have suffered the effects of fire suppression and uncharacteristic fire intervals and severity.

Forestry and Woodlands

Management of forestry and woodlands under Alternative D would be the same as described under Alternatives B and C with the same number of acres as Alternatives B and C (930,910 acres) open to wood product harvest. More acres would be open to wood product harvest than under Alternative A resulting in the highest risk of invasive plant spread and establishment.

Water Resources

Alternative D provides the same restrictions to changes in vegetation cover as Alternative B, which would provide for fewer allowable vegetation treatments in these areas than under Alternative A and reduce the area in which vegetation management is allowed.

Recreation, Transportation, and Special Designations

The number of ecological site groups that would be designated as OHV closed, OHV limited, and OHV open under Alternative D is summarized in Table 3-26. Approximately 982,914 acres (72%) and the majority of most ecological site groups in BENM would be closed to OHV travel, the most of any alternative and 546,839 acres more than Alternative A. Of the area that would be converted from OHV limited to OHV closed, approximately 190 miles are classified as Impact Class D, or containing erosive loss of 2 to 8 inches of soil or compaction and subsidence 2 to 8 inches deep. These closures, especially of the Class D segments, would provide enhanced protection to vegetation communities and special status species, such as those identified in Proclamation 10285, by reducing impacts from surface-disturbing activities as described in Section 3.4.4.5.2 and would allow for degraded soils and vegetation communities to recover. Designating areas that are currently OHV limited to OHV closed would reduce vehicular travel on designated routes and reduce unauthorized off-route travel and therefore limit impacts to vegetation and special status species to a greater extent than under Alternative A or any other action alternatives. In addition to reduction in impacts from surface disturbance, the reduced accessibility would likely lead to fewer indirect impacts to vegetation from people recreating in the area.

Under Alternative D, there would be far more restrictions and limits on recreational use in low-use areas compared to Alternative A. Alternative D also considers implementing restrictions on some or all types of recreation in areas of BENM as necessary to protect Monument objects, including the plants identified in Proclamation 10285, and would include road and trail closures. These additional restrictions and reduced accessibility would reduce impacts to vegetation in the more remote and low-use areas of the Monument, including reduced damage and reduced spread and establishment of invasive plants. Alternative D would maintain existing recreation facilities only as needed to address impacts in those areas and would remove facilities otherwise. New development of facilities would only occur to protect BENM objects. This could result in less vegetation removal and disturbance than under Alternative A; however, increased dispersed recreation could impact vegetation in other areas.

Visual Resources

Alternative D would manage 212,089 fewer acres than Alternative A as VRM Class III and would have no acres managed as VRM Class IV, as opposed to the 143,845 acres under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management; chaining would not be allowed. This would reduce the impacts of these types of treatments as discussed in Section 3.4.4.5.2, but it may require more frequent small-scale treatments of vegetation to maintain desired condition classes.

Lands and Realty

Under Alternative D, a total of 849,021 acres would be managed as ROW exclusion, 399,738 more acres than Alternative A. A total of 515,052 acres would be managed as ROW avoidance, 334,723 more acres than Alternative A. The number of acres of ecological site groups that would be in each type of ROW allocation under Alternative D is summarized in Table 3-27. The ecological site groups with the most area in ROW avoidance or exclusion zones are Arid Warm – Sandy Uplands, Loamy Uplands and Semiarid Warm – Shallow, Deep Rocky. These areas are vulnerable to disturbance and drought and prone to invasion by annuals, so the increased protection from ROW authorization in these areas would further protect them from these impacts.

3.4.4.2.7. Impacts under Alternative E

Vegetation management under Alternative E would emphasize Traditional Indigenous Knowledge and techniques and natural processes. The goals of vegetation management would be to restore ecosystems; return natural fire intervals, vegetation conditions, and landscape characteristics; and maintain multiple uses on the Monument without large amounts of human interference or impacts. In addition to considering VCC when prioritizing vegetation management, areas that provide traditional use plants would also be a priority under Alternative E. Increased collaboration with the BEC would help protect the ecological legacy of BENM and provide management techniques that are not typically considered under a Western approach to land management and under which native vegetation communities could thrive.

Alternative E would account for seasonality and drought conditions when considering vegetation management, which could include limits on seed collection, additional requirements for restoration and/or erosion control, changes in vegetation management, or limitations on discretionary activities. Considering seasonality when managing vegetation could allow for more resource rest and protection during important times, especially for special status species or vulnerable plant communities. Additionally, with climate change predicting more frequent and intense droughts, the ability to alter vegetation management would allow for greater community resilience and would reduce impacts that are magnified during drought times, especially when coupled with other resource uses such as livestock grazing, recreation, or seed collection.

Unlike Alternative A, Alternative E would allow for mechanical vegetation management methods only when necessary to protect BENM objects. The prioritization of natural processes and reduction in machinery used during vegetation management would likely reduce the number and scale of restoration projects. This could result in short-term positive impacts on vegetation and special status plant species as described in Section 3.4.4.5.2; however, the reduction in these projects may also adversely impact vegetation communities and special status species in the long term. Reliance on natural processes and using native plants in revegetation would increase native plant cover, leading to an increase in diversity, structure, and function of the vegetation community; however, there are some instances where native plants have a low probability of success, and the inability to use nonnative, non-invasive plants may slow restoration and potentially allow for an increase in invasive plants or require the use of more invasive mechanical methods, increasing the necessity for multiple treatments and slowing movement toward desired conditions.

Livestock Grazing

Under Alternative E, in addition to the 135,007 acres unavailable for grazing under Alternative A, an additional 28,027 acres (an additional 2% of total acreage) would be unavailable for livestock grazing (same as Alternatives B and C) (see Table 3-25). Overall, it is anticipated that livestock would continue to have a neutral effect on the terrestrial vegetation condition with potential for

site-specific impacts that can be effectively addressed individually as needed by land managers and through additional actions under Alternative E.

Under Alternative E, vegetation management with the primary purpose of improving forage for livestock grazing would be prohibited. Additionally, Alternative E would require use levels to be determined on an allotment basis, and levels would be established within 2 years of the release of this RMP/EIS, likely requiring many hours of on-the-ground assessment. This site-specific determination of use would allow for adaptive livestock management to accommodate on-the-ground rangeland factors with sustainable use levels to allow for the maintenance or improvement of desired conditions.

Fuels and Fire

Fire and fuels management under Alternative E is similar to Alternative D. This may include using more traditional indigenous methods for fire suppression and for fuels reduction as well as an increase in prescribed fire. The increase in prescribed burning would likely result in a benefit for the vegetation communities in the Decision Area that are fire dependent, such as aspen and ponderosa pine, and have suffered the effects of fire suppression and uncharacteristic fire intervals and severity; however, Alternative E stipulates that no foam retardant or other chemical spraying could be used within 300 feet of perennial waterbodies except for the protection of human lives. This may allow fires to burn in these riparian areas.

Forestry and Woodlands

Under Alternative E, wood product harvest would be emphasized in areas of pinyon-juniper encroachment and other areas where analysis indicates that harvest would be useful for the restoration of the vegetation community which would likely benefit these communities. Additionally, the agencies and the BEC would monitor populations and locations of traditionally harvested trees and their uses and impacts to vegetation and wildlife species, and wood product use would be opened or closed permanently or on a seasonal or multi-year basis to allow for resource rest. Management of forests and woodlands under Alternative E would provide more adaptive management of these resources and emphasize plant community health, which would allow for fewer detrimental impacts to vegetation and may enhance ecosystem functioning. Under this alternative, no clearcutting would be allowed, protecting vegetation from the spread of invasive plants and monoculture regrowth that may occur with clearcutting actions.

Water Resources

Alternative E provides similar restrictions to changes in vegetation cover as Alternative B but stipulates that discretionary actions that alter vegetative cover would be prohibited within 0.5 mile of springs, riparian areas, and intermittent and perennial streams, rather than the 300 feet specified in Alternative B. This would potentially restrict vegetation management and types in more areas than Alternative A and may be detrimental to areas that need vegetation management.

Recreation, Transportation, and Special Designations

The number of ecological site groups that would be designated as OHV closed, OHV limited, and OHV open under Alternative E is summarized in Table 3-26. Approximately 569,971 acres (74%) and the majority of most ecological site groups in BENM would be closed to OHV travel, the same as Alternative D. These areas would provide enhanced protection to vegetation communities and special status species by reducing impacts from surface-disturbing activities as described in Section 3.4.4.5.2. Designating areas that are currently OHV limited to OHV closed would reduce vehicular travel on designated routes as well as reduce unauthorized off-route travel and, therefore,

limit impacts to vegetation and special status species to a greater extent than under Alternative A or any other action alternative except Alternative D. In addition to reduction in impacts from surface disturbance, the reduced accessibility would likely lead to fewer indirect impacts to vegetation from people recreating in the area.

Alternative E would implement restrictive recreational elements such as permits, fees, and number limitations to limit or controls recreational uses that are damaging areas of BENM. The agencies would work with the BEC to develop a Monument permit system for day and night use in all canyons and would implement area closures as necessary to prevent recreation-caused damage. This enhanced restriction of recreation, such as limitations on dispersed camping and off-trail hiking, as well as the increase in prescriptive recreation management, would result in fewer impacts to vegetation as mentioned in Section 3.4.4.5.2. Development and maintenance of facilities under Alternative E would look the same as Alternative D, with facilities only allowed in Front Country Zones and in areas where they would protect BENM objects. Creation of fewer facilities would result in less vegetation removal for the creation of these facilities.

Visual Resources

Alternative E would manage 212,000 fewer acres than Alternative A as VRM Class III and would have no acres managed as VRM Class IV as opposed to the 143,882 acres under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management (such as chaining or harrowing). This would reduce the impacts of these types of treatments as discussed in Section 3.4.4.5.2, but it may require more frequent small-scale treatments of vegetation to maintain desired condition classes.

Lands and Realty

There would be a total of 1,104,956 acres, the most of any alternative, managed as ROW exclusion, and 259,116 acres managed as ROW avoidance. The number of acres of ecological site groups that would be in each type of ROW allocation under Alternative E is summarized in Table 3-27. The ecological site groups with the most area in ROW avoidance or exclusion zones are Arid Warm – Sandy Uplands, Loamy Uplands and Semiarid Warm – Shallow, Deep Rocky. These areas are vulnerable to disturbance and drought and prone to invasion by annuals, so the increased protection from ROW authorization in these areas would further protect them from these impacts.

3.4.4.2.8. Cumulative Impacts

The cumulative effects analysis area for vegetation consists of BLM-administered lands, NFS lands, NPS lands, and adjacent state, Tribal, county, and privately owned lands surrounding BENM. Ongoing and planned actions in and near BENM would influence vegetation conditions and management effectiveness on a regional scale (see Appendix J). The time frame for cumulative environmental consequences for future actions is 20 years, or the life of the plan.

Portions of BENM adjoin other BLM-administered lands, NFS lands, national parks, and national recreation areas, each with its own land management plan (LMP) guiding vegetation, recreation, and fuels management in the administrative area. Vegetation management, including fire and fuels management, is becoming more broadly consistent across federal landownerships due to updated plan adherence with current federal law, regulation, and policy.

The cumulative impacts of past and present actions on vegetation in the Planning Area are captured in the description of the affected environment. This primarily includes post-European settlement livestock grazing and fire suppression, resulting in current vegetation conditions that

have departed from historical conditions. This has resulted in a landscape with increased woody plant and invasive annual grass densities and a greater potential for uncharacteristically large, severe fires compared with historical conditions. Ongoing climate trends, including more frequent extreme fire weather, extreme drought, and intense storms, combine with and exacerbate these conditions.

Actions taken outside BENM include federal and state-funded hazardous fuels reduction, prescribed fire, habitat enhancement and range improvement projects on NFS lands and BLM-administered lands, as well as recreation management projects. The hazardous fuels reduction, prescribed fire, and habitat enhancement projects generally aim to move vegetation conditions and fuels loading toward historical conditions and restore historical fire regimes, as well as provide habitat for special status species and big game (see Section 3.4.11, Wildlife and Fisheries). Continuation of management prescribed in the 2008 Monticello RMP, 2008 Moab RMP, and 1986 Manti-La Sal LRMP would allow for activities that increase the risk of wildfires such as recreation, and also allow for vegetation management projects that would reduce fuels loading. These RMPs, as well as *Standards and Guidelines for Rangeland Health* (BLM 1997), will continue to guide invasive and noxious weed management on lands bordering BENM. These management actions have the potential to reduce weeds coming onto the Monument. Projects listed in Appendix J that are near BENM (e.g., TY Cattle Company wells, UDOT Bluff material site, Aneth d-212X oil and gas wells, Cave Canyon water wells, Red Canyon water wells, Summit Operating pipeline, Cactus Park project, Lockhart allotment range improvements, Horse Canyon reservoir and water tank, Black Steer reservoir, Daneros Mine expansion, and San Juan River side channel restoration) could impact vegetation conditions and remove vegetation, potentially indirectly affecting lands within BENM by changing seed banks or spreading weeds. These indirect effects could interact cumulatively with the effects described in the analysis of the alternatives above to change vegetation conditions, particularly on the margins of the Planning Area.

Non-federal land management policies are likely to continue affecting vegetation management around BENM. The cumulative effects across the large, geographically complex, and diverse cumulative effects analysis area are difficult to analyze, considering the uncertainties associated with government and private actions, and ongoing changes to the region's economy; however, based on the trends identified in this section, cumulative effects such as increases in recreation, continued establishment and spread of weeds, continued woody encroachment, ongoing livestock grazing, and continued housing and commercial development are likely to continue or increase.

RFFAs in BENM have the potential to impact vegetation. Projects that are anticipated to alter vegetation conditions include a fuels reduction treatment and maintenance of treated lands project in the Shay Mesa vicinity; a fuels reduction and habitat restoration project at Cactus Park; vegetation management on mesa tops around Red Canyon, Jacobs Chair, Tables of the Sun, and White Canyon to increase forage for bighorn sheep; and prescribed fire projects in North Elk Ridge, South Elk Ridge, Mormon Pasture, and Maverick Point. Projects that may increase the potential for impacts to vegetation including vegetation removal and increased invasive plant spread are range improvement projects consisting of construction of reservoirs, storage tanks, fences, and wells; trail development and maintenance projects; transportation maintenance and construction; and several ROW development projects.

Proposed vegetation management activities under the action alternatives would contribute to the cumulative effects of regional vegetation management by other agencies and stakeholders. These efforts would contribute to landscape restoration and ecological resilience on a larger scale, with a focus on achieving desired vegetation conditions, restoring historical fire regimes, and reducing the potential for large-scale landscape change.

3.4.5. Noxious Weeds and Nonnative Invasive Plants

3.4.5.1. AFFECTED ENVIRONMENT

Noxious weeds and nonnative invasive plants (hereafter just described as invasive plants) disrupt or have the potential to disrupt or alter natural ecosystem function, composition, or diversity of infested areas. These species complicate natural resource use and may interfere with management objectives.

Invasive plants are nonnative and able to establish on many sites, grow quickly, and spread to the point of disrupting plant communities or ecosystems. These species have the potential to become a dominant or codominant species in an area if their future establishment and growth are not controlled by management interventions. Species that become dominant for only one to several years (for example, a short-term response to drought or wildfire) are not invasive plants (BLM 2008).

Noxious weeds are a subset of invasive plants. These are plant species designated by a federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common in the United States (BLM 2008). Noxious weeds in the Planning Area are designated by the Utah Noxious Weed Act of 2008.

Noxious weeds have been found in a variety of locations and habitat types, with waterways and trails and roadways being the major vectors of spread. Other vectors include vehicle use, wind, wildlife, livestock, and humans.

Table 3-28 summarizes the noxious weeds documented in the Planning Area.

Table 3-28. Noxious Weeds Documented in the Planning Area

Name	Weed Class*
Russian knapweed (<i>Acroptilon repens</i>)	3
Jointed goatgrass (<i>Aegilops cylindrica</i>)	3
Camelthorn (<i>Alhagi pseudalhagi</i>)	1B
Hoary cress or whitetop (<i>Cardaria draba</i>)	3
Musk thistle (<i>Carduus nutans</i>)	3
Canada thistle (<i>Cirsium arvense</i>)	3
Field bindweed (<i>Convolvulus arvensis</i>)	3
Russian olive (<i>Elaeagnus angustifolia</i>)	4
Scotch thistle or cotton thistle (<i>Onopordum acanthium</i>)	3
Tamarisk or saltcedar (<i>Tamarix ramosissima</i>)	3
Puncturevine or goathead (<i>Tribulus terrestris</i>)	3

Source: Carling (2022).

* 1B = Limited distribution in Utah, early detection, rapid response; 3 = Widely distributed in Utah, considered beyond control, control expansion; 4 = Present in Utah, prevent distribution through seed law.

Noxious weeds such as tamarisk and Russian olive have invaded waterways and riparian areas throughout the Planning Area, including the San Juan River floodplain and tributaries, and drastically changed the composition of riparian vegetation communities, geomorphology, and

fluvial processes. Populations of Russian knapweed (*Acroptilon repens*) have also reached high levels along river corridors such as the San Juan River, with camelthorn (*Alhagi pseudalhagi*) and ravengrass (*Saccharum ravennae*) following suit. Field bindweed (*Convolvulus arvensis*) and Scotch thistle (*Onopordum acanthium*) are known to occur along roadways, rangelands, disturbed areas, and developed areas. Jointed goatgrass (*Aegilops cylindrica*) occurs along roadways and in developed and disturbed areas. Hoary cress (*Cardaria draba*) occurs along waterways and in riparian areas and developed areas. Musk thistle (*Carduus nutans*) and Canada thistle (*Cirsium arvense*) are known to occur along roadways and waterways and in rangelands, disturbed areas, and developed areas. Puncturevine (*Tribulus terrestris*) is also known to occur in rangelands and developed and disturbed areas.

Additional weeds on the Utah Noxious Weed List (Utah Weed Control Association 2022) that have been documented in the region and have the potential to become introduced in the Planning Area are listed in Table 3-29.

Table 3-29. Noxious Weeds Documented in the Region

Name	Weed Class*
Diffuse knapweed (<i>Centaurea diffusa</i>)	2
Yellow star-thistle (<i>Centaurea solstitialis</i>)	2
Spotted knapweed (<i>Centaurea stoebe</i>)	2
Squarrose knapweed (<i>Centaurea virgata</i>)	2
Poison hemlock (<i>Conium maculatum</i>)	3
Bermudagrass (<i>Cynodon dactylon</i>)	3
Houndstongue (<i>Cynoglossum officinale</i>)	3
Quackgrass (<i>Elymus repens</i>)	3
Leafy spurge (<i>Euphorbia esula</i>)	2
Dyer's woad (<i>Isatis tinctoria</i>)	2
Perennial pepperweed or tall whitetop (<i>Lepidium latifolium</i>)	3
Dalmatian toadflax (<i>Linaria dalmatica</i>)	2
Purple loosestrife (<i>Lythrum salicaria</i>)	2
Johnsongrass (<i>Sorghum halepense</i>)	3

* 2 = Widely distributed in Utah, considered controllable; 3 = Widely distributed in Utah, considered beyond control, control expansion.

Although not listed on Utah's Noxious Weed List, an invasive nonnative plant species of concern and significant change agent in the region is cheatgrass. Change agents alter ecosystem processes, such as fire regimes, and have the potential to expand their distribution in spite of human and natural disturbances and to adapt and shift their range in response to climate change (Bradley et al. 2016).

Annual invasive grasses, such as cheatgrass, are known to increase fire frequency and alter ecosystems in western rangelands (Bradley et al. 2018). Cover greater than 1% of invasive annual grasses translates to higher fire frequency. The BLM uses AIM Strategy data as a tool to determine land conditions, trends, plant groups, cover rates, and functions. These data are collected from monitoring plots across the western United States, including 139 plots in BENM (see Section 3.4.1; see Appendix A, Figure 3-16, Terrestrial and lotic AIM data points within BENM administrative boundaries). According to terrestrial BLM AIM Strategy and landscape monitoring framework data from 2013 through 2021, a majority (69%) of the monitoring plots had little to no invasive annual

grass cover, and most HUC 10 watersheds are meeting expected LANDFIRE BPS conditions for invasive annual grass cover (Table 3-30). LANDFIRE BPS represent the vegetation communities that were likely dominant on the landscape prior to Euro-American settlement based on the biophysical environment and the historical disturbance regime. See Appendix K for more information about AIM data. The most abundant invasive annual grass in the Planning Area is cheatgrass. Red brome (*Bromus rubens*) and annual wheatgrass (*Eremopyrum triticeum*) are also recorded on monitoring plots in the Planning Area (BLM 2022).

Table 3-30. Invasive Annual Grass Cover in the Planning Area

HUC 10	Percentage of Plots Meeting Expected BPS Condition (%)
Cataract Canyon – Colorado River	60
Comb Wash – San Juan River	95.7
Copper Canyon – San Juan River	100
Cottonwood Wash	100
Dark Canyon	100
Grand Gulch	100
Gypsum Canyon	66.7
Harts Draw	50
Indian Creek	100
Lime Creek – San Juan River	94.7
Lockhart Canyon – Colorado River	100
White Canyon	94.7

Source: BLM and USDA Forest Service GIS (2022).

Appendix A, Figure 3-18, AIM data for annual forb/grass cover changes from 1997 to 2021 shows that there has been an overall decrease in annual forbs and grasses throughout the Monument from 1997 to 2021.

Controlling undesirable and nonnative species is one of the most difficult challenges, as well as one of the most significant problems, facing vegetation managers. The Monticello FO contracts with San Juan County to control weeds on BLM-administered lands and on average treats 55 acres per year in BENM, primarily along the San Juan River corridor. San Juan County surveyed roads within the Monticello FO for noxious and invasive plant species in 1997 and 1998. When possible, these surveys are updated annually. A list of species can be found in the 2008 Monticello RMP. The USDA Forest Service monitors and treats between 250 and 300 acres of nonnative species a year.

The use of certified weed-free hay is one guideline implemented from *Rangeland Health: Utah's Standards and Guidelines for Healthy Rangelands* (BLM 1997) to control the spread of noxious weeds. The USDA Forest Service also maintains a stipulation that weed-free hay must be used. For revegetation purposes, the use and perpetuation of native species have been a priority, except for instances when nonintrusive, nonnative species are more ecologically or economically feasible.

Established weed populations will likely continue to expand, and new weed species will continue to appear in the Planning Area as a result of natural and anthropogenic introductions. Noxious weeds and invasive plants will be more likely to establish in newly disturbed areas, especially near existing populations. In some areas, control efforts are expected to eradicate species locally.

The degree to which these species spread is directly correlated to human activities, disturbances, and control efforts. Recreation equipment such as sleeping bags, tents, and clothing contribute to weed populations. Vehicular travel and other land use activities contribute to weed proliferation, although natural elements, such as wind and wildlife, will likely also continue to contribute.

Control of noxious weeds and invasive plants would depend on the cost and feasibility of available treatment methods. Resource management strategies are in place that would contribute to maintaining current levels or reducing the expansion of these species. Examples of these strategies are minimizing activities that contribute to the spread of noxious weeds, requiring prompt reclamation of these disturbed areas, reducing traffic through infested areas, requiring power washing of equipment, implementing integrated invasive plant management strategies, and using fire suppression tactics. Research continues to develop new herbicide formulations and test the effectiveness of biological agents, including pathogens, as tools to control weed species.

3.4.5.2. ENVIRONMENTAL CONSEQUENCES

3.4.5.2.1. Issues

- How would existing and proposed land use allocation decisions about grazing, recreation, lands and realty actions, and discretionary uses affect noxious weeds and invasive nonnative plants?
- How would existing and proposed vegetation management affect noxious weeds and invasive nonnative plants?

3.4.5.2.2. Impacts Common to All Alternatives

Agencies would coordinate with the BEC and Tribal Nations in controlling the spread of invasive plants under all alternatives. This would include using a combination of Traditional Indigenous Knowledge, including, to the extent practicable, Tribal Nations' policies on invasive species and agency techniques, along with other treatments options, such as BMPs (Appendix G). This inclusion of Traditional Indigenous Knowledge may result in techniques that are uncommon in typical western weed management, may allow for more ecological treatment of weeds in BENM, and potentially allow for increased native cover and resilience.

Livestock Grazing

Grazing can also increase susceptibility for the introduction and spread of noxious and invasive plants by degrading the native grass community and creating ground disturbance from the livestock themselves and from maintenance of associated infrastructure. As described in Affected Environment, grazing is associated with decreased BSC and perennial grass cover and corresponding increases in invasive annual grasses (Duniway et al. 2018). Livestock movement and associated activities, such as the transport of contaminated hay, can also introduce noxious and invasive plants into new locations. However, all alternatives include management direction to mitigate the risks of these impacts and to emphasize sustainable, healthy rangelands with respect to grazing practices. Any permit that is voluntarily relinquished by its holder would become unavailable for grazing. Additional acres unavailable for grazing would reduce the risk of noxious and invasive species establishment and spread in these areas by reducing the vectors of weed spread and disturbance pathways.

Wildlife Management

All management alternatives include seasonal closures for roosting, hibernating, or breeding of sensitive species. These closures may limit vegetation treatments in certain areas at certain times of the year, potentially requiring invasive plant treatments during less ideal times.

Fuels and Fire

All alternatives would allow the use of prescribed fire under specific weather and wind conditions to remove plant biomass. When used in conjunction with other treatments, prescribed fire can help move plant communities toward desired conditions by improving seed bed conditions and facilitating desired vegetation establishment. Additionally, in areas with high invasive cover, prescribed fire could reduce plant cover as well as reduce the invasive seed bank. Removing aboveground biomass can allow for higher competitive ability for perennial grasses and forbs by freeing resources for growth (Monsen et al. 2004). Prescribed fire would not be used in areas known to be highly susceptible to post-fire cheatgrass or other invasive species invasion. See Section 3.5.4 for more information on prescribed fire and its effects on vegetation and fuels.

Water Resources

The goal under all alternatives is to protect and restore riparian, wetland, and water resources, including spring sand seeps. This includes ensuring the ecological diversity, stability, and sustainability of these systems and would likely include efforts to remove invasive riparian plants such as tamarisk.

Recreation, Transportation, and Special Designations

Under all alternatives, designated routes and trails exist throughout the Monument that may impact vegetation, and special status and culturally important species. Development of new roads, as well as development and maintenance of trails and facilities can introduce invasive species via new transportation corridors as seeds traveling on the tires and undercarriages of vehicles and attached to clothing, shoes, and outdoor gear. OHVs can spread invasive plants and can alter native plant communities, making them more susceptible to invasive plant invasion. Limiting OHV use to designated or existing routes helps confine these impacts to high-use areas and can reduce how widespread these impacts are; however, the introduction of invasive plants can still occur in OHV limited areas. Areas that are closed to OHV use do not have these impacts from OHVs to vegetation. No areas are designated as OHV open, which greatly reduces the spatial impact of OHV use on vegetation.

Recreationists' vehicle tires or undercarriages or footwear and clothing can introduce invasive and nonnative plant materials. These risks are highest around developed campgrounds, in heavily used dispersed areas, and along motorized routes, trails, and trailheads. The probability that noxious and invasive plants will successfully establish depends on several factors, including plant propagule pressure and the amount and intensity of surface disturbance. The more propagules that are introduced, the more likely that nonnative plants will eventually become established (Von Holle and Simberloff 2005). Impacts from recreation can be concentrated in high-use areas such as SRMAs or ERMAs on BLM-administered lands. Concentrating impacts in one area can also prevent more dispersed impacts from recreation elsewhere in BENM. Furthermore, rules and guidelines in SRMAs and ERMAs would limit or control activities through specialized management tools, such as designated campsites, permits, and area closures. NFS lands in BENM area have few developed recreation sites, so most visitor impacts are more dispersed.

Visual Resources

Areas designated as ACECs, WSAs, or WSRs would need to meet VRM Class I or II objectives, which minimize the amount of disturbance in those areas. This could mean there would be fewer allowable vegetation treatments and/or more small-scale treatments in these areas, which could benefit vegetation in the short term (due to lack of disturbance) but may result in lower quality vegetation conditions and allow for greater invasive species spread in the long term.

Lands and Realty

All alternatives allow for varying levels of ROW development. ROW development can cause removal of vegetation and soil compaction, which may be detrimental to the native plant community and allow for invasive species to have a foothold. Additionally, ROW areas are susceptible to transportation of invasive seeds on vehicle tires and undercarriages, as well as on shoes and clothing.

Areas identified as ROW exclusion areas would not allow ROW of development and therefore avoid surface-disturbing activities and avoid the impacts mentioned above. ROW avoidance areas have the potential to be developed if no other alternative exists, so they would provide more protection against invasive species establishment and spread than ROW open areas but may still allow for these impacts.

Vegetation Management

Weed spread is often influenced by the extent of disturbed soil and the proximity to established weed-infested areas. Assessing weed spread is based in part on evaluation of the difference in frequency, intensity, or type of management activity or natural processes (such as wildlife) that result in significant soil disturbance.

Vegetation treatments can increase the risk of noxious and invasive species establishment and spread by increasing surface disturbance and introducing vectors of weed spread. See Section 3.4.4 for a description of how different vegetation treatments impact noxious and invasive species establishment and spread. BMPs used under all alternatives to prevent the spread of noxious and invasive plants in accordance with local weed program monitoring protocol and coordination with the BEC and Tribal policy on invasive species would reduce or prevent these impacts. Additionally, all alternatives would include collaboration with the BEC on invasive management and would incorporate Traditional Indigenous Knowledge in managing invasive plants on the Monument. In the long term, vegetation treatments would increase native vegetation function and resilience by facilitating native shrub and perennial grass and forb cover (Miller et al. 2000) and by increasing resistance to invasive annual grass invasion (Tausch et al. 2009).

3.4.5.2.3. Impacts under Alternative A

Under Alternative A, current management of terrestrial vegetation would continue under the 2020 ROD/MMPs, the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP as amended. The condition and trends for noxious weeds and invasive species, as summarized in the affected environment, would be expected to continue along similar trajectories. Prevention and control measures, including the use of herbicides approved for use on BLM-administered lands, would be implemented for treating and preventing the spread of invasives.

Livestock Grazing

Alternative A would provide the most acreage (1,223,820 acres) available to livestock grazing across all alternatives. In these areas, noxious weeds and invasive species would likely continue to establish and spread, as described in Section 3.4.5.2.2.

Forestry and Woodlands

Alternative A would continue to manage woodlands suitable for commercial harvest for timber or wood fiber production; essentially any woodlands that are suitable could potentially be harvested, which may result in more commercial harvest and the potential for spread of invasives due to harvesting techniques. Additionally, Alternative A would continue to allow clearcuts on any forest cover type, which would allow for increased erosion, introduction and spread of invasive species, and monoculture regrowth leading to less resilient plant communities and more potential for invasive spread.

Water Resources

In the approximately 15% of the Monument covered by the 2020 ROD/MMPs, floodplains and riparian areas would continue to be protected, and surface-disturbing activities would be prohibited within active floodplains or within 100 meters of riparian areas, unless it is a vegetation treatment that does not impair riparian function. Prohibiting discretionary actions and/or surface disturbance in these sensitive areas would reduce the ability of invasive and noxious plants to spread in these areas. Management would include actions to reduce tamarisk, Russian olive, and other woody invasive species.

Recreation, Transportation, and Special Designations

Managing 436,075 acres as closed to OHV travel would preclude motorized travel effects on the introduction and spread of noxious and invasive species; however, invasive species can still spread through established transportation corridors, although the spatial impact of spread would be much less in areas managed as OHV limited (928,080 acres).

Under Alternative A, the BLM would continue to manage approximately 1,077,686 acres as SRMAs or ERMAs, the most of any alternative. This alternative would result in the most area managed for recreation and would strive to concentrate recreation to a few areas. This may result in concentrated impacts from recreation in these areas and increased spread and establishment of invasive plants; however, management would likely concentrate invasive plant treatments in these areas due to high use and visibility. Additionally, the BLM would manage 48,954 acres of LWC to prioritize the protection of those wilderness characteristics, and an additional 427,342 acres as ACECs, WSAs, or WSRs. These areas would be closed to OHV use and would limit other types of mechanized use, as well as limiting camping and large group activities. Limiting camping and group size could reduce result in fewer impacts to native vegetation such as trampling, soil compaction, and unintentional fire starts, which would likely result in more resilient communities that are more resistant to invasive plant establishment and spread. Many mechanical treatments are prohibited in these special designation areas, which would reduce the spread of invasive species in the short term, but possibly allow for gradual spread of these species in untreated areas.

Visual Resources

Alternative A may result in increased levels of vegetation treatments to improve the VCC, which may result in reduced cover of invasive plants. Increasing the number of treatments could also increase the spread and introduction of nonnative species as described in Section 3.4.5.2.2, but

may also increase the number of invasive plant treatments and reduce invasive plant spread overall.

Lands and Realty

Under Alternative A, the BLM would continue to manage 449,283 acres as ROW exclusion areas and 180,329 acres as ROW avoidance. The introduction and spread of noxious weeds and invasive species would continue to be reduced in these areas by reducing surface-disturbing activities that increase the introduction and spread of these species, as described in Section 3.4.5.2.2. Continued introduction and spread would still be expected to occur in areas open to ROW authorization (814,018 acres).

3.4.5.2.4. Impacts under Alternative B

Alternative B focuses on vegetation management to maintain plant diversity, native species productivity, and maintaining vegetation for Indigenous peoples' traditional and ceremonial uses. Treatments would focus on enhancing or maintaining desirable conditions of vegetation. This focus on maintaining plant diversity and native species could help focus invasive plant treatment in areas otherwise not considered under Alternative A (areas that are not high risk, or high value).

Livestock Grazing

Under Alternative B, in addition to the allotments that are unavailable under Alternative A, an additional 28,027 (2% of total acreage in the Monument) would be unavailable for grazing. Additional acres unavailable for grazing would reduce the risk of noxious and invasive species establishment and spread in these areas by reducing the vectors of weed spread and disturbance pathways.

Forestry and Woodlands

Under Alternative B, clearcutting would be prohibited on NFS lands, except where used to regenerate aspen, reducing the impacts of this type of timber harvest as described under Impacts under Alternative A. More acres would be open to wood product harvest than under Alternative A, which may allow for higher rates of invasive plant establishment and spread.

Water Resources

Management of water resources under Alternative B is similar to Alternative A, except that any discretionary actions in riparian or wetland areas must be proven to have long-term impacts (rather than general benefits), which may alter the types of invasive species treatments permitted and would also likely require vegetation treatments to have ongoing monitoring and treatment to ensure that invasive species do not return and/or do not alter the ecosystem.

Recreation, Transportation, and Special Designations

In all, 566,627 acres would be closed to OHV travel, 130,552 acres more than Alternative A (10% of total acreage in BENM), and OHV would be limited on 797,525 acres, 130,555 acres fewer than Alternative A. Closing areas where OHV travel was previously limited to designated routes would reduce travel on designated routes and reduce the potential for the introduction and spread of noxious and invasive species. Preventing additional routes from being designated and limiting the areas where unauthorized off-route vehicle use may occur would reduce the creation of new potential transportation vectors for invasive species.

Alternative B would manage recreation with limiting or restricting public use as little as possible. Similar to Alternative A, managing for fewer high-use areas would reduce the concentration of invasive species in high-use areas but could also result in more wide-spread invasives throughout the Monument. The BLM would manage to conserve 97,403 acres of LWC and 417,150 acres as ACECs, WSAs, or WSRs. These designations would help protect vegetation in these areas from large-scale introductions and spread of noxious and invasive species.

Visual Resources

Alternative B would manage 194,479 fewer acres than Alternative A as VRM Class III and would have no acres managed as VRM Class IV as opposed to the 143,845 acres under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management (such as chaining or harrowing). This would reduce the impacts of these types of treatments as discussed in Section 3.4.5.2.2 and would likely lead to reduced spread of invasive species; however, reducing the number of treatments may allow for increased spread of invasive plants in places where they are already established.

Lands and Realty

In all, 453,381 acres would be managed as ROW exclusion areas, 4,098 more acres than Alternative A, and the least of any action alternative. Under Alternative B, 905,213 acres would be managed as ROW avoidance, the most of any alternative, and 724,884 more acres than Alternative A. Additionally, 5,477 acres would be open to ROW authorization, as compared to 524,229 acres under Alternative A. The introduction and spread of noxious weeds and invasive species would be reduced in ROW exclusion areas by reducing surface-disturbing activities and areas where unauthorized off-route vehicle use may occur that would result in increased introduction and spread of noxious and invasive species, as described in Section 3.4.5.2.2. Continued introduction and spread would still be expected to occur in areas open to ROW authorization. Avoidance areas may reduce the spread and establishment of invasive plants, but development in these areas may still occur, resulting in increased spread of noxious weeds and invasive plants.

3.4.5.2.5. Impacts under Alternative C

Alternative C similarly prioritizes vegetation treatments as under Alternative B and requires collaboration with the BEC and the incorporation of Indigenous techniques for managing noxious and invasive species, so effects from vegetation management would be similarly different from Alternative A as those described under Alternative B; however, the prohibition of chaining on the Monument under Alternative C would reduce the potential to introduce noxious and invasive species that can occur with the large-scale disturbances caused by chaining. Additionally, introducing more light-on-the-land techniques throughout the Monument (in wilderness, USDA Forest Service–recommended wilderness, WSAs, and lands managed for wilderness characteristics) would likely have a similar result in reducing the introduction and spread of noxious and invasive species.

Livestock Grazing

Under Alternative C, in addition to the allotments designated as unavailable/not suitable for grazing under Alternative A, an additional 28,027 acres would be designated as unavailable/not suitable for grazing (an additional 2.7%). Acres unavailable/not suitable for grazing would reduce the risk of noxious and invasive species introduction and spread in these areas by reducing the vectors of weed spread and disturbance pathways to a greater extent than Alternative A.

Forestry and Woodlands

Alternative C would have the most acreage open to wood product harvest compared to Alternatives A and B (the highest of any alternative), resulting in the highest risk of invasive plant spread and establishment.

Water Resources

Alternative C is similar to Alternative A, except that any discretionary actions in riparian or wetland areas must be proven to have long-term impacts (rather than general benefits), which may alter the types of invasive species treatments permitted and would also likely require vegetation treatments to have ongoing monitoring and treatment to ensure that invasive species do not return and/or do not alter the ecosystem.

Recreation, Transportation, and Special Designations

Alternative C would limit OHV use on 700,122 acres, 227,958 acres less than Alternative A, and 664,030 acres would be closed to OHV travel, 227,955 more acres than Alternative A. Closing these routes and areas where OHV travel was allowed would reduce vehicular travel on designated routes, reducing the potential for the introduction and spread of noxious and invasive species in these areas to a greater degree than under Alternative A. Preventing additional routes from being designated would reduce the creation of new potential transportation vectors for invasive species.

Compared to Alternative A, Alternative C would include less on-the-ground presence of personnel, signage, and developed facilities than Alternative A but more emphasis on permitting and off-site education, which would help reduce the spread and establishment of invasive plants. Less on-the-ground presence may result in increased damage to vegetation from visitors; however, increased permits and reducing group size could reduce invasive spread.

Visual Resources

Alternative C would manage 195,055 fewer acres than Alternative A as VRM Class III and would have no acres managed as VRM Class IV, as opposed to the 143,845 acres under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management; chaining would not be allowed. This would reduce the impacts of these types of treatments as discussed in Section 3.4.5.2.2 and likely lead to reduced spread of invasive species; however, reducing the number of treatments may allow for increased spread of invasive plants in places where they are already established.

Lands and Realty

Under Alternative C, the BLM would manage 552,278 acres as ROW exclusion areas, 102,995 acres more than Alternative A. In all, 811,794 acres would be managed as ROW avoidance, 631,465 more acres than Alternative A. This increase in ROW exclusion and avoidance areas would reduce the potential for the introduction and spread of noxious and invasive species to a greater degree than under Alternative A. Additionally, there would be no acres open to ROW authorization. This would result in a significant reduction in the potential for noxious and invasive species introduction and spread.

3.4.5.2.6. Impacts under Alternative D

Vegetation management under Alternative D would emphasize maintaining the diversity of plant functional groups, enhancing native species productivity, and maintaining vegetation for

Indigenous peoples' traditional and ceremonial uses. Alternative D prioritizes using light-on-the-land treatments throughout the Monument, as well as using traditional indigenous techniques and/or natural processes for vegetation management. Using more light-on-the-land techniques could result in fewer introductions of noxious and invasive plants introduced through larger-scale disturbance associated with mechanical treatments; however, these techniques are much smaller scale, so there would likely be a reduction in the number and scale of treatment projects, potentially causing a long-term decline in vegetation condition and an increase in the spread of noxious and invasive species if certain tools and techniques were not authorized to be used.

Reliance on natural processes and prohibiting the use of nonnative, noninvasive plants help increase native plant cover, leading to an increase in diversity, structure, and function of the vegetation community; however, there are some instances where native plants have a low probability of success, and the inability to use nonnative, noninvasive plants may slow restoration and potentially allow for an increase in invasive plants or require the use of more invasive mechanical methods, increasing the necessity for multiple treatments and slowing movement toward desired conditions.

Livestock Grazing

Under Alternative D, in addition to the allotments designated as unavailable/not suitable for grazing under Alternative A, an additional 224,194 acres would be designated as unavailable/not suitable for grazing (18.9%). Acres unavailable/not suitable for grazing would reduce the risk of noxious and invasive species introduction and spread in these areas by reducing the vectors of weed spread and disturbance pathways to a greater extent than Alternative A.

Forestry and Woodlands

Management of forestry and woodlands under Alternative D would be the same as described under Alternative B, except the same number of acres as Alternative C (the most of any alternative) would be open to wood product harvest. Impacts to noxious and invasive plants would be similar to those described under Alternative B.

Water Resources

Management of riparian areas and floodplains under Alternative C is the same as under Alternative B, so impacts to noxious and invasive plants would be similar to those described under Alternative B.

Recreation, Transportation, and Special Designations

Alternative D would limit OHV use on 381,239 acres, less than half of the acreage under Alternative A. A total of 982,914 acres would be closed to OHV travel, twice the amount as Alternative A and the most of any alternative. Closing these areas where OHV travel is allowed or limited would reduce the potential for the introduction and spread of noxious and invasive species in these areas to a greater degree than under Alternative A.

Under Alternative D, there would be far more restrictions and limits on recreational use in more remote areas compared to Alternative A, as well as reduced access to many more areas. These additional restrictions and reduced access would help reduce the spread of invasive plants to more remote areas of the Monument.

Visual Resources

Alternative D would manage 212,089 fewer acres than Alternative A as VRM Class III and would have no acres managed as VRM Class IV, as opposed to the 143,845 acres under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management; chaining would not be allowed. This would reduce the impacts of these types of treatments as discussed in Section 3.4.5.2.2 and likely lead to reduced spread of invasive species; however, reducing the number of treatments may allow for increased spread of invasive plants in places where they are already established.

Lands and Realty

Under Alternative D, the BLM would manage 849,021 acres as ROW exclusion areas, 399,738 more acres than Alternative A. A total of 515,052 acres would be managed as ROW avoidance, 334,723 more acres than Alternative A. This increase in ROW exclusion areas would reduce the potential for the introduction and spread of noxious and invasive species to a greater degree than under Alternative A. There would be no acres open to ROW authorization. This would result in a significant reduction in the potential for noxious and invasive species introduction and spread.

3.4.5.2.7. Impacts under Alternative E

Vegetation management under Alternative E emphasizes Traditional Indigenous Knowledge and techniques, as well as natural processes. Restoring ecosystems, returning natural fire intervals and vegetation conditions, and maintaining multiple uses on the Monument without large-scale human interference and impacts are the main goals of this management option.

Chaining would be prohibited in the entire Monument, reducing the potential for the introduction of noxious and invasive species that can occur with the large-scale disturbances caused by chaining. Additionally, the preference for natural processes and nonmechanical treatment would likely result in short-term declines in the introduction and spread of noxious and invasive species; however, there would likely be a reduction in the number and scale of treatment projects, potentially causing a long-term decline in vegetation condition and an increase in the spread of noxious and invasive species if certain tools and techniques are not authorized to be used.

Additionally, under Alternative E, only native, non-genetically modified organism (GMO) seeds could be used in revegetation and restoration projects. The feasibility of obtaining non-GMO native seeds, especially those that are locally adapted to BENM, could make these projects slower or require the use of nonideal plants on a site, which could lead to increased spread of noxious or invasive species.

Under Alternative E, limitations on seed collection, additional requirements for restoration and/or erosion control, changes in vegetation management, and limitations on discretionary actions would be implemented during times of drought. Although predicting impacts of drought to noxious and invasive species is complex and relatively uncertain, adapting management to drought conditions would likely allow for greater resource rest and fewer methods for noxious weeds and invasives to spread throughout the Monument.

Livestock Grazing

Under Alternative E, an additional 28,027 acres would be unavailable/not suitable for grazing than under Alternative A (2% of total BENM acreage). Impacts would similar to Alternative B.

Forestry and Woodlands

Under Alternative E, wood product harvest would be emphasized in areas of pinyon-juniper encroachment and other areas where analysis indicates that harvest would be useful for the restoration of the vegetation community and to reduce spread of invasive plants. Additionally, the agencies and the BEC would monitor populations and locations of traditionally harvested trees, and wood product use would be opened or closed permanently or on a seasonal or multiyear basis to allow for resource rest. Management of forests and woodlands under Alternative E would provide more adaptive management of these resources and emphasize plant community health, which would allow for fewer detrimental impacts to vegetation and may enhance ecosystem functioning. Under this alternative, no clearcutting would be allowed, protecting vegetation from the spread of invasive plants and monoculture regrowth that may occur with clearcutting actions.

Water Resources

Under Alternative E, no new discretionary actions that alter vegetative cover would be allowed within 100-year floodplains or within 0.5 mile of springs, riparian areas, and intermittent and perennial streams unless necessary to protect BENM objectives. This is more restrictive than Alternative A and may result in fewer noxious weed and invasive plant treatments in areas that may need them; however, it may also result in fewer surface-disturbing vegetation treatments that allow for greater spread of invasive and noxious weeds.

Recreation, Transportation, and Special Designations

Alternative E would manage 569,971 acres as closed to OHV travel and 794,181 acres and would be limited OHV use. Closing these routes and areas where OHV travel was allowed or limited would reduce the potential for the introduction and spread of noxious and invasive species in these areas to a greater degree than under Alternative A.

Alternative E would implement restrictive recreational elements such as permits, fees, and number limitations to limit or controls recreational uses that are damaging areas of BENM. The agencies would work with the BEC to develop a Monument permit system for day and night use in all canyons and would implement area closures as necessary to prevent recreation-caused damage. This enhanced restriction of recreation as well as the increase in prescriptive recreation management would help reduce the spread and establishment of invasive species from human vectors. Development and maintenance of facilities under Alternative E would look the same as Alternative D, with facilities only allowed in Front Country Zones and in areas where they would protect BENM objects. Fewer creation of facilities would result in less soil disturbance reducing the establishment of invasive species, but it may also result in more dispersed recreation throughout BENM, which could spread invasive plant vectors throughout the Monument instead of concentrating them.

Visual Resources

Alternative E would have no acres managed as VRM Class III or IV, which would result in 357,969 more acres managed in Classes I or II than under Alternative A. Fewer areas managed as VRM Classes III and IV would mean less allowable large-scale vegetation management and less high-disturbance management; chaining would not be allowed. This would reduce the impacts of these types of treatments as discussed in Section 3.4.5.2.2 and likely lead to reduced spread of invasive species; however, reducing the number of treatments may allow for increased spread of invasive plants in places where they are already established.

Lands and Realty

Under Alternative E, the BLM would manage 1,104,956 acres as ROW exclusion areas, 655,673 acres more than Alternative A. This increase in ROW exclusion areas would reduce the potential for the introduction and spread of noxious and invasive species to a greater degree than under Alternative A. In all, 259,116 acres would be managed as ROW avoidance, 78,787 more acres than Alternative A, and no acres would be open to ROW authorization. This would result in a significant reduction in the potential for noxious and invasive species introduction and spread.

3.4.5.2.8. Cumulative Impacts

The BLM, NFS, NPS, and adjacent state, Tribal, county, and privately owned land surrounding BENM are considered the cumulative effects analysis area for noxious weeds and invasive plants. Ongoing and planned actions in and near BENM would influence noxious weeds and invasive plant conditions and management effectiveness on a regional scale (see Appendix J).

Portions of BENM adjoin other BLM-administered lands, NFS lands, national parks, and national recreation areas, each with its own LMP, noxious weeds, and invasive plant species in the administrative area. Noxious weeds and invasive species management is becoming more broadly consistent across federal land ownerships, due to updated plan adherence with current federal law, regulation, and policy. Direction for noxious and invasive species management in the adjacent agency LMPs is complementary to the proposed plant components for BENM. This means broad movement toward reducing or eradicating noxious weeds and invasive species would be facilitated across administrative boundaries in this region.

The cumulative impacts of past and present actions on vegetation in the Planning Area are captured in the description of the affected environment (see Section 3.4.4). This primarily includes post-European settlement livestock grazing and fire suppression, resulting in current vegetation conditions that are departed from historical conditions. This has resulted in a landscape with increased woody plant and invasive annual grass densities and a greater potential for uncharacteristically large, severe fires compared with historical conditions. Ongoing climate trends, including more frequent extreme fire weather, extreme drought, and intense storms, combine with and exacerbate these conditions.

Actions taken outside BENM include federal and state-funded hazardous fuels reduction, prescribed fire, habitat enhancement and range improvement projects on NFS lands and BLM-administered lands, as well as recreation management projects. These activities could affect the condition of noxious weeds and invasive species within the cumulative effects analysis area. The 2008 Monticello RMP, 2008 Moab RMP, and 1986 Manti-La Sal LRMP, as well as *Rangeland Health: Utah's Standards and Guidelines for Healthy Rangelands* (BLM 1997), will continue to guide invasive and noxious weed management on lands bordering BENM and will have the potential to reduce weeds coming onto the Monument. Projects that are near BENM could impact noxious weeds and invasive species, including TY Cattle Company wells, UDOT Bluff material site, Aneth d-212X oil and gas wells, Cave Canyon water wells, Red Canyon water wells, Summit Operating pipeline, Cactus Park project, Lockhart allotment range improvements, Horse Canyon reservoir and water tank, Black Steer reservoir, Daneros Mine expansion, and San Juan River side channel restoration. These projects could potentially and indirectly affect lands within BENM and interact cumulatively with the effects described in the analysis of the alternatives above.

Non-federal land management policies are likely to continue affecting vegetation management around BENM. The cumulative effects across the large, geographically complex, and diverse cumulative analysis area are difficult to analyze, considering the uncertainties associated with

government and private actions and ongoing changes to the region's economy; however, based on the trends identified in this section, cumulative effects including increases in recreation, continued establishment and spread of weeds, continued woody encroachment, ongoing livestock grazing, and continued housing and commercial development are likely to continue or increase.

RFFAs in BENM have the potential to impact noxious weeds and invasive species. These are generally projects that would substantially increase surface disturbance or increase vectors of weed spread. Projects that are anticipated to alter vegetation conditions include a fuels reduction treatment and maintenance of treated lands project in the Shay Mesa vicinity; a fuels reduction and habitat restoration project at Cactus Park; vegetation treatments on mesa tops around Red Canyon, Jacobs Chair, Tables of the Sun, and White Canyon to increase forage for bighorn sheep; and prescribed fire projects in North Elk Ridge, South Elk Ridge, Mormon Pasture, and Maverick Point. Projects that may increase the potential for impacts to vegetation including vegetation removal and increased invasive plant spread are range improvement projects consisting of construction of reservoirs, storage tanks, fences, and wells, trail development and maintenance projects, transportation maintenance and construction, and several ROW development projects.

Proposed vegetation management activities under the action alternatives would contribute to the cumulative effects of regional vegetation management by other agencies and stakeholders. These efforts would contribute to landscape restoration and ecological resilience on a larger scale, with a focus on achieving desired vegetation conditions, restoring historical fire regimes, and reducing the potential for large-scale landscape change.

3.4.6. Forestry and Woodlands

3.4.6.1. AFFECTED ENVIRONMENT

Woodland resources within the Planning Area consist primarily of pinyon-juniper and Gambel oak woodlands as well as mixed conifer (dry), ponderosa pine, and aspen forest communities. From an Indigenous perspective, "The natural resources of the Bears Ears cultural landscape – water, land, wind, sound – are imbued by powerful religious, artistic, and other cultural meanings significant to Native communities with ancestral ties to this region. There are meaningful names for places on the land and they are linked with significant deities, stories, and past events" (see Appendix L:20). These places can be topographic features, but also include areas containing important natural resources such as forests. In addition, forests and woodlands can be important for Indigenous activities such as pinyon nut gathering (e.g., members of the Navajo Nation) and firewood gathering (e.g., members of the Ute Mountain Ute Tribe) (see Appendix L).

3.4.6.1.1. Woodland Uses

This analysis describes approximately 1,074,955 acres of woodlands managed by the BLM that are within the Planning Area. LANDFIRE data were used for the woodland acreage calculations. According to the 2008 Moab RMP, the BLM has eight areas designated for wood product harvest: Cedar Mesa, Salt Creek Mesa, Harts Draw, South Cottonwood, North Comb Ridge, Shash Jáa Unit, Dark Canyon Plateau, and White Canyon (Appendix A, Figure 3-24, BLM-designated timber harvest areas). The BLM currently partners with Indigenous peoples to cut fuelwood within these eight areas. Harvesting of trees for fence posts and Christmas trees on BLM-administered lands also occurs to a lesser degree.

This analysis also describes approximately 289,104 acres of woodlands managed by the USDA Forest Service. Wood product harvest by individuals is the primary use of woodlands managed by the USDA Forest Service in the Planning Area.

Harvesting of trees for fence posts and Christmas trees on BLM-administered lands also occurs to a lesser degree. Harvesting of wood products for Indigenous peoples' traditional and ceremonial uses also occurs in the Planning Area on both BLM-administered and NFS lands. Areas with willow and mature oak on NFS lands are important to Tribal Nations for plant collection. Table 3-31 shows the number of woodland permits sold on NFS lands in the Planning Area from 2018 to 2022.

Table 3-31. USDA Forest Service Wood Permits Sold from 2018 to 2022

Permit Type	Permits Sold	Wood Type	Volume Sold	Value
Christmas trees	19	Combined softwood	443	\$4,430.00
Every Kid Free Christmas Tree	1	Subalpine fir	1	\$10.00
Fuelwood	1,137	Oak	159	\$1,555.00
		Dead	3,229	\$16,145.00
		Dead (free use COVID-19)	1,210	\$6,050.00
		Free use fuelwood	94	\$945.00
Poles	2	Aspen	100	\$20.00
		Softwood	50	\$20.00
Posts	41	Aspen	95	\$57.00
		Juniper	24	\$9.60
		Ponderosa	143	\$114.40
		Combined softwood	480	\$384.00
		7- to 8.9-foot aspen	405	\$405.00
		7- to 8.9-foot ponderosa	170	\$170.00
Ornamental	1	Aspen	1	\$5.00
		Combined softwood	4	\$25.00
Total	1,201		6,608	\$30,345.00

Source: Eckhout (2022).

3.4.6.1.2. Woodland Types

Woodland types in the Planning Area are described in detail below. There are approximately 1,074,955 acres of woodlands administered by the BLM and approximately 289,104 acres administered by the USDA Forest Service in the Planning Area. Table 3-32 below provides the acreages of the two most dominant woodland types.

Table 3-32. Dominant Woodland Type Acreages for the Planning Area

Woodland Type	BLM Acres	USDA Forest Service Acres	Total Acres
Pinyon-Juniper and Gambel Oak Woodlands	474,763	173,906	648,669
Mixed Conifer (dry) Communities	2,696	72,478	75,174

Aspen and Aspen-Mixed Conifer Communities

Aspen and aspen-mixed conifer communities are found on approximately 101 acres of BLM-administered land and approximately 6,757 acres of NFS lands within BENM, totaling approximately 6,858 acres.

This community is important for a large number of wildlife species throughout its stages of succession, serving as nesting and foraging habitat for such species as Cassin's finch (*Haemorhous cassinii*) and western tanager (*Piranga ludoviciana*), cavity nesters, and raptors, including northern goshawk (*Accipiter gentilis*). It is also important summer range for big game such as mule deer (*Odocoileus hemionus*) and elk (*Cervus canadensis*), providing both forage and cover components. Aspen also provides forage and cover for livestock. In addition, aspen maintains watershed condition, enhances soil productivity, and is aesthetically pleasing.

Quaking aspen are declining across the Planning Area except in some burned areas. Generally, tree ages range from 60 to 150 years. The lack of large-scale disturbance has allowed the natural progression of aspen to succeed to conifers. Increases in the abundance and density of conifers make this forest type more susceptible to large-scale insect infestations, disease outbreaks, severe wildland fires, drought, and climate change, possibly endangering overall forest ecosystem health (Hood and Miller 2007).

In addition, this forest type lacks early seral communities. Early seral communities are the ecological communities that emerge after a stand-replacing disturbance.

STRESSORS AND DRIVERS

Conifers such as Douglas-fir, Engelmann spruce, ponderosa pine, white fir, and subalpine fir have been replacing seral aspen for the past 130 years. Aspen is an early seral tree species in the mixed conifer zone that relies primarily on vegetative suckering to regenerate. Lack of disturbance allows conifer tree encroachment that results in fewer aspen, increased acreage of conifer stands that are less diverse, and forest stands that are structurally continuous (less mosaic-like). Herbivory and browsing by ungulates such as livestock, deer, and elk are stressors to these communities.

Aspen dieback and decline from insect disease agents were part of a trend of increasing damage reported across the western United States, which peaked in 2007. Decline and dieback damage was largely caused by canker diseases and insect borers, but defoliators played a role in some areas (Guyon and Hoffman 2011). The lost acreage has converted to ponderosa pine, Douglas-fir, or white fir forest types within the Planning Area. Mortality of trees in aspen communities, over the entire national forest acreage, has increased more than fivefold since 1993 (U.S. Department of Agriculture/Pacific Northwest Research Station 2016).

Herbivory and browsing have impacts on aspen stands. Long-term or heavy ungulate browsing can alter aspen demography and composition. Aspens have higher nutrient value than slower-growing trees, and thus are more appealing to ungulates as a food source (Seager et al. 2013).

Mixed Conifer-Mountain Shrub Woodlands

Mixed conifer-mountain shrub communities cover approximately 63 acres of BLM-administered lands and approximately 2,237 acres of NFS lands within BENM, totaling approximately 2,300 acres.

These woodlands are composed of various conifer species, such as Douglas-fir (*Pseudotsuga menziesii*), mountain mahogany (*Cercocarpus* spp.), and other higher-elevation species. These

communities provide valuable wildlife habitat and wildlife food sources. Productivity, species composition, and resiliency differ within this type depending on soil depth. As stands mature toward full canopy closure, understory vegetation becomes sparse and forage values decrease. These communities are the primary target for wood product harvest authorizations by the Monticello FO. These stands are also regularly evaluated and treated for high fire potential and undesired encroachment into other habitats.

Trends for mixed conifer-mountain shrub communities are localized and for the most part stable. There have been some impacts related to encroachment of pinyon and juniper and loss due to heavy wildlife browsing. For a discussion about the impacts from wildfire, see Section 3.5.4 of this document.

STRESSORS AND DRIVERS

With fire suppression, this woodland type has vigorously colonized many sites formerly occupied by open ponderosa pine woodlands. These invasions have dramatically changed the fuel load and potential behavior of fire in these forests. In particular, ponderosa pine now co-dominates on drier sites and increases the potential for high-intensity crown fires by increasing the amount of fuel available. Increased landscape connectivity, in terms of fuel loadings and crown closure, has also increased the potential size of crown fires.

Fire suppression has led to the encroachment of more shade-tolerant, less fire-tolerant species and an attendant increase in landscape homogeneity and connectivity (from a fuels perspective). This could increase the lethality and potential size of fires.

Mixed Conifer (Dry) Communities

These woodland community types cover approximately 2,696 acres of BLM-administered land and approximately 72,478 acres of NFS lands within BENM, totaling approximately 75,174 acres.

Mixed conifer (dry) communities are composed of both ponderosa pine and Douglas-fir communities. Ponderosa pine typically grows in pure pine communities, whereas Douglas-fir typically has white fir (*Abies concolor*), ponderosa pine, and/or aspen intermixed. Pure ponderosa pine communities occur across the top of Elk Ridge. These communities vary between even-aged ponderosa pine communities and mixed conifer multilayered canopy types, primarily due to natural and small-scale human-caused disturbances.

Endemic levels of insects and diseases are present in this woodland type. Insects (including Douglas-fir beetle [*Dendroctonus pseudotsugae*] and mountain pine beetle [*Dendroctonus ponderosae*]), disease, and fire have had a major role in maintaining the diversity of composition and structure in this community type. Fire suppression has resulted in increased stand densities, predisposing them to increased insect mortality.

Dry mixed conifer stands provide important habitat for many wildlife species, including threatened, endangered, and regionally sensitive species. The diversity of vegetation composition, structure, and multilayered canopy are all important attributes for the many wildlife species that depend on this habitat type, particularly late seral-dependent species. Burned stands provide habitat for some bird species, especially Lewis's woodpecker (*Melanerpes lewis*) and three-toed woodpecker (*Picoides dorsalis*) and cavity-nesting species such as western bluebird (*Sialia mexicana*). Other species, including Grace's warbler (*Setophaga graciae*), flammulated owl (*Otus flammeolus*), and Allen's big-eared bat (*Idionycteris phyllotis*), require habitat components associated with mature forests, such as higher canopy cover, large trees, and snags. Wild turkeys (*Meleagris gallopavo*) are

common in ponderosa pine habitats, where mature stands mixed with openings provide large trees for roosting and a productive understory herbaceous component for foraging.

Abert's squirrel (*Sciurus aberti woodhouse*) is the species most directly dependent on ponderosa pine habitat in the Planning Area. Tree characteristics largely determine the quality of squirrel habitat, with a direct relationship between the number of interlocking crowns and the quality of habitat (Brown 1984).

Past timber harvesting, particularly in the 1960s, removed the large, older ponderosa pines from stands while ignoring dense ponderosa pine and conifer understory components. Fire exclusion resulted in second-growth ponderosa pine stands with higher densities than would have occurred under historical fire regimes. Historical stand structures were typically multilayered with a range of tree sizes. In ponderosa pine stands, past timber management practices have resulted in a variety of structural stages. The majority of acreage is dominated by 12- to 18-inch-diameter trees (68% according to Vegetation Classification, Mapping, and Quantitative Inventory [VCMQ] mapping). Old-growth ponderosa pine has been reduced and is fragmented across the national forest.

A variety of structural stages are present across the landscape. Most stands fall within an average of 12- to 18-inch-diameter trees (68% of composition). Because of limited management activities, drought, climate change, and fire suppression activities, stand densities have increased, particularly in the smaller size classes. Past management practices have had variable impacts to structure and species composition.

Dwarf mistletoe (*Arceuthobium* spp.) affects approximately one-quarter of ponderosa pine (Ogle et al. 1998). As a result of fire exclusion for the last 100 years, ladder fuels and a dense understory of oak, manzanita (*Arctostaphylos patula*), or pinyon-juniper amongst stands of ponderosa could contribute to wildfires outside the historical range of intensity and size. The reduction in numbers of Douglas-fir and white fir are partly because of western spruce budworm (*Choristoneura occidentalis*) and Douglas-fir beetle, which have impacted Douglas-fir and true firs on NFS lands (U.S. Department of Agriculture/Agricultural Research Service, Systematic Entomology Laboratory 2016).

INSECTS AND DISEASE

Climate change will likely increase stress in ponderosa pine stands, making them more susceptible to bark beetle infestation and large stand-replacing fire (which kills all or most of the living overstory trees in a forest) (Bond et al. 2012). Denser stocking and increased ladder fuels will also increase the likelihood of insect outbreaks. The last large insect outbreak occurred in the late 1990s. Mortality due to mountain pine beetle peaked in the mid-1980s and the late 1990s along the South Elk Ridge area. The USDA Forest Service conducted timber sales in the South Elk Ridge area in the late 1990s in response to this increased mortality.

STRESSORS AND DRIVERS

As a result of fire exclusion for the last 100 years, ladder fuels and dense stands of ponderosa pine could contribute to wildfires outside the historical range of intensity and size. Additionally, a buildup of forest litter increases potential fire hazard and lethal fire effects on vegetation by concentrating heat on the upper soil layers and around the stems of trees and shrubs. In addition to unplanned vegetation changes, more intense disturbances have significant effects on soil and water quality. Potential loss or reduction of habitat conditions for late seral-dependent wildlife species is high.

Most of the mixed conifer (dry) vegetation communities could experience a frequent fire return interval (0–35 years), with mixed-severity fire resulting in less than 75% of the dominant overstory

vegetation being replaced. This is typical for this forested community. The next 25% within this vegetation community could experience a longer fire return interval (35–100 years) with less than 75% of the dominant overstory vegetation being replaced. The vegetation type is trending away from open park-like stands to denser stocked stands, allowing for more shade-tolerant species, thus transitioning from historically frequent/low-severity fire return intervals to less frequent/higher-severity fire return intervals.

Ponderosa pine forests have gained some acreage from riparian zones, aspen, sagebrush, and mountain brush but have lost acreage to Douglas-fir and white fir invasion (Kaufmann et al. 2005).

Pinyon-Juniper Shrublands and Gambel Oak Woodlands

These vegetation types cover approximately 474,763 acres of BLM-administered land and approximately 173,906 acres of NFS lands in BENM, totaling approximately 648,669 acres.

Pinyon (*Pinus edulis*) is generally more abundant in stands at middle elevations where annual precipitation exceeds 15 inches. At lower elevations, juniper typically dominates. Utah juniper (*Juniperus osteosperma*) is a surface feeder with a shallow, spreading root system, making it highly competitive with other plants. Its distribution and density have increased at lower elevations because of grazing and lack of fire, allowing it to occupy areas with deeper soils. As it increases on these sites, it displaces sagebrush and, in some instances, mountain shrub communities. Pinyon becomes more abundant on sites where annual precipitation exceeds 15 inches.

Pinyon-juniper shrublands and Gambel oak (*Quercus gambelii*) woodlands are typically found between conifer forest and sagebrush vegetation communities. These shrublands and woodlands have expanded beyond their historical distribution in geographic extent and are quite dense due to fire suppression. Unproductive rocky and bare sites are in need of less management, such as thinning and mastication, to improve understory productivity, because there is less vegetation present.

Historically, pinyon and juniper occupied two site conditions. On better sites, pinyon and juniper grew in a savannah-like community. Grass and forb species occupied the understory below open grown trees, which are trees that grow away from other trees and therefore have less competition for nutrients, light, and space with other trees. Frequent surface fires kept these communities from becoming overly dense. Pinyon-juniper also occupied rocky, bare ridgelines and hill slopes. The lack of a fine herbaceous understory prevented fire from spreading into these sites. Early Euro-American settlers cut pinyon and juniper for railroad ties, fence posts, and other uses. This cutting, in addition to overgrazing by livestock, altered the ecology of these sites. Many native species were lost as well as most of the topsoil. Today, these areas have rocky, shallow soils incapable of supporting a herbaceous understory that could be burned by fire. Pinyon-juniper communities provide habitat to a very diverse group of neotropical migratory bird species.

Stands in this community are high density. The grass-forb component in overmature and dense stands of pinyon and juniper has been substantially reduced as a result of competition for available light, space, and moisture with pinyon and juniper. Currently, in some stands, the herbaceous understory may be unable to respond following a fire. Opportunities exist to burn these areas to remove the pinyon-juniper overstory and restore the community to an open condition through mechanical treatments and mixed-severity fire.

In conjunction with stress caused by climate change and drought, a number of insects and diseases can cause mortality in pinyon-juniper communities. Agents of particular importance include pinyon Ips (*Ips confusus*), twig beetles (*Pityophthorus* spp.), pitch moths (Pyrilidae [especially *Dioryctria*

spp.]), black stain root disease (caused by *Leptographium wageneri*), and pinyon dwarf mistletoe (*Arceuthobium divaricatum*). Pinyon Ips are the most important insect mortality agent, causing most of the pinyon mortality in the Intermountain West (Rogers 1993; Shaw et al. 2005).

Unhealthy pinyon-juniper stands are evident across the Planning Area, especially in areas with shallow soils. Pinyon and juniper mortality, attributed to the combination of drought, Ips beetles, and root disease, occurs in the Monticello FO area. Pinyon is a valuable resource for firewood harvest and wildlife habitat management. It also provides pine nuts for human collection and consumption, including Tribal pinyon nut gathering. The increase in dead wood has led to an increase in fuel loading and area fire hazards, although this increase may also temporarily support firewood collection needs.

On the other hand, pinyon-juniper encroachment in areas with deep soils is continuing. More sagebrush communities and understory vegetation are lost as this occurs, resulting in an increase in soil erosion and creation of a monoculture of pinyon-juniper communities.

Pinyon-juniper plant community distribution and dynamics across the landscape are primarily driven by climate. Since the mid-1900s, pinyon-juniper communities have expanded into other forest communities. Movement of pinyon-juniper shrublands into both higher and lower elevations is driven by increasing temperatures, increasing carbon dioxide levels, and increasing availability of nitrogen from air pollution (Tausch 1999). It is estimated that pinyon-juniper shrublands have increased tenfold over the past 130 years throughout the Intermountain West (Miller and Tausch 2001). Fire suppression and lack of thinning have contributed to dense, overmature stands, leading to higher risks from insect and disease infestations as well as uncontrolled wildfires.

Watersheds with large areas of pinyon-juniper encroachment would become susceptible to increased erosion if large high-intensity fires were to denude the landscape. The geographic range or extent in occurrence is expanding due to encroachment into sites that were historically sagebrush or mountain shrub communities. Unbalanced densities (structure), compositions, and patterns are indicators of improperly functioning conditions. There may be cases of other invasive, nonnative species, such as cheatgrass, occurring within the pinyon-juniper cover type. The existence or potential establishment of these species should be considered when identifying areas to treat.

STRESSORS AND DRIVERS

Because of the lack of historical disturbance regime, the expansion of pinyon and juniper on sagebrush and grassland sites will continue. First, trees establish as seedlings and sapling trees are scattered throughout big sagebrush and perennial grasses. Next, trees rapidly encroach and co-dominate with shrubs and herbs. Growth rates of trees increase until they mature, then growth rates decline as the canopy closes.

In addition to expansion, stand density has increased, resulting in increased vulnerability to crown fire (Kaufmann et al. 2005), as well as susceptibility to drought and insects. As the canopy of the woodlands closes, understory plants, especially shrubs, rapidly decline (Chambers 2008). The expansion of shrublands now covers an average of three to four times the pre-Euro-American settlement area. These areas represented some of the more diverse and productive sagebrush ecosystems in the region and currently support, or will support, some of the highest levels of tree dominance and fuel loads. Consequently, sagebrush communities continue to decline as tree dominance continues to increase (Despain and Mosley 1990). The rate of the transition from sagebrush ecosystem to tree-dominated shrubland is variable depending on the site potential for transition. In general, a minimum of 60 to 90 years is required for trees to dominate a site (Barney

and Frischknecht 1974). In addition, climate change and drought are a stressor to these woodland types.

Developed/Urban Forests

Developed/urban forest communities cover approximately 419 acres of BLM-administered lands and approximately 275 acres of NFS lands within BENM, totaling approximately 694 acres. This community includes the western cool temperate developed and urban deciduous, evergreen, and mixed forest types.

These forest types occur in low to moderately urbanized settings. According to GIS mapping of LANDFIRE data, these acres of developed and urban forest were found along the major roadways and found on developed sites. This forest type is generally characterized by unnatural combinations of species (primarily native species, although they often contain slight or substantial numbers and amounts of species nonnative to the region as well).

There is not enough information on this forest type to determine trends. For a discussion about the impacts from wildfire, see Section 3.5.4 of this document.

In general, demand for wood product harvest has increased since 2018, and the trend is expected to continue. The BLM and USDA Forest Service anticipate an increased need for more active woodland and wood products management due to trends such as insect-caused mortality, increased fire, and changing vegetation communities. In addition to an increase in demand, there is an increase of disturbance in wood-cutting zones. Future management decisions regarding OHV use, ACECs, WSAs, and visual resources may impact where wood cutting and vegetative treatments would be allowed to take place.

3.4.6.2. ENVIRONMENTAL CONSEQUENCES

3.4.6.2.1. Issue

- How do existing and proposed vegetative treatments (e.g., prescribed fire, thinning) and harvesting affect the health and preservation of woodlands, the objects of the Monument related to forests, and Indigenous peoples' traditional and ceremonial uses?

3.4.6.2.2. Impacts Common to All Alternatives

As discussed in Section 3.3.1, agencies would collaborate with the BEC and Tribal Nations to incorporate Traditional Indigenous Knowledge to establish and implement forest health and forest management standards and guidelines and to assess conditions and guide management decisions for woodland resources. Traditional Indigenous Knowledge would be used across BENM to manage forests and woodlands. Because of Indigenous peoples' deep roots in BENM and their relationship to the landscape, this knowledge would contribute positively to the responsible stewardship of woodlands. For example, Indigenous people may be able to observe subtle changes in woodlands and suggest management actions based on their specific cultural understanding of patterns and processes of change in BENM (Daniel et al. 2022).

Where possible, agencies would prioritize making fuelwood and wood products resulting from fuels and vegetation projects readily available to Indigenous people and other members of the public. All wood product harvest would require authorization, which would be provided consistent with the availability of wood products and the protection of other resource values. The number of authorizations could increase if more people apply for them. Agencies would coordinate with the BEC, Tribal Nations, local governments, and other organizations to support the collection, storage,

and transportation of wood products to communities, including those of Tribal Nations. Agencies would also coordinate with the BEC and Tribal Nations to identify appropriate areas for wood product harvest.

With regard to climate change, “temperatures in Utah have risen more than 2.5° F since the beginning of the 20th century. Warming is particularly evident in the increase of very warm nights and a below average occurrence of very cold nights over the past three decades. Assuming a higher emissions pathway, historically unprecedented warming is projected to continue through this century” (Frankson et al. 2022). Even with a lower emissions pathway, annual average temperatures are projected to exceed historical record levels by the middle of this century. Droughts are expected to become more intense (Frankson et al. 2022). Warming temperatures and increasing drought conditions due to climate change create more favorable conditions for wildfires to occur. Increased fire frequency and fire size could create impacts to healthy woodlands, lowering ecological resilience and altering forestry and wood product availability.

Recreational uses, including OHV travel, camping, and hiking, are expected to increase over time, and can increase the potential for impacts to forests and woodlands because certain forms of recreation (e.g., motorized recreation) increase ground disturbance, noxious and invasive weed introduction and distribution, and human-caused fire occurrences.

Temporary closures of portions of the Monument may be implemented seasonally to protect seasonal wildlife behavior such as migration, lambing, and rutting. The closures would result in temporary limited access for wood products, but the extent of these limitations would depend on the acreage and duration of closure.

All alternatives support forest health to reduce adverse impacts from insects and disease. Under all alternatives, the pinyon-juniper and Gambel oak woodlands is the most available woodland type by acreage but the least available woodland type relative to its availability on the Monument.

3.4.6.2.3. Impacts under Alternative A

Under Alternative A, management would involve the least amount of collaboration with the BEC and subsequently the least input of Traditional Indigenous Knowledge. For example, the 2020 ROD/MMPs excludes floodplains and riparian and aquatic areas from wood product use except for Indigenous peoples’ traditional and ceremonial uses as determined (by the BLM alone) on a site-specific basis. This could result in a limited amount of Indigenous peoples’ information and knowledge being used in management decisions for forests and woodlands and could limit the input of Traditional Indigenous Knowledge in determining harvest seasons.

Cottonwood and willow harvest would be allowed for Indigenous peoples’ traditional and ceremonial uses under Alternative A. Restrictions on this permitted harvest would be implemented as necessary to achieve or maintain PFC and to maintain or improve threatened and endangered (T&E) species or special status species, wildlife, and aquatic habitat. Without careful monitoring of riparian areas under this alternative to observe the impacts of cottonwood and willow harvest, the PFC of riparian areas may be impacted. Wildlife species with habitat in riparian areas could also be impacted.

On BLM-administered lands, wood product harvest would be allowed in areas where the BLM has approved fuels treatment (e.g., prescribed fire) or habitat treatment projects. This could inhibit full recovery of fire-treated woodlands or wildlife habitat restoration due to increased wood collection. All WSAs and IRAs would be excluded from wood product use except for limited on-site collection of

dead wood for campfires under Alternative A, which could help protect the integrity of forests in WSAs and IRAs.

On NFS lands, Alternative A would continue to manage woodlands suitable for commercial harvest for timber or wood fiber production; essentially any woodlands that are suitable could potentially be harvested, which may result in more commercial harvest. Alternative A would continue to allow clear-cuts on any forest cover type with a potential for impact from, or that have been impacted by, insects or disease. Clear-cutting removes all trees in an area and can result in an increased risk of soil erosion, visual impacts, the regeneration of species that do not tolerate shade, and monoculture regrowth.

Alternative A would also continue to limit wood product harvest to eight designated areas, rather than the entire BENM. This could result in overharvesting in the eight designated areas if not carefully monitored.

Under Alternative A, 715,667 acres would remain open to wood product harvest (approximately 52% of the Monument). Alternative A is the most restrictive alternative regarding wood product harvest because it has the smallest acreage available for harvest. This could result in a lower risk of noxious weed establishment and spread but reduces opportunities for Indigenous people and other members of the public to collect wood products.

Appendix A, Figure 2-1, Areas open and closed to wood product harvest under Alternative A, depicts the areas that would continue to be open or closed to wood product harvest under Alternative A. Within the area open to wood product harvest, approximately 456,650 acres are actually woodlands according to LANDFIRE. Table 3-33 shows the woodland types, the total acreages of each woodland type within the Monument, and the acreage and percentage for each woodland type open to harvest under this alternative.

Table 3-33. Acreage and Percentage of Woodland Type Open to Harvest under Alternative A

Woodland Type	Acreage of Woodland Type within the Monument	Acreage of Each Woodland Type Open to Harvest under Alternative A	Percentage of Each Woodland Type Open to Harvest under Alternative A
Aspen and Aspen-Mixed Conifer Communities	6,858	6,757	99%
Mixed Conifer-Mountain Shrub Woodlands	2,300	1,537	67%
Mixed Conifer (Dry) Communities	75,174	70,044	93%
Pinyon-Juniper and Gambel Oak Woodlands	648,670	377,703	58%
Developed/Urban Forests	694	609	88%

The pinyon-juniper and Gambel oak woodlands is the most available woodland type by acreage but the least available woodland type relative to its availability on the Monument. Given the large acreage of pinyon-juniper and Gambel oak woodlands available for harvest, impacts are not expected to be problematic with regard to concentration of harvest in a relatively low proportion of available pinyon-juniper and Gambel oak woodlands.

It is assumed that no wood product harvest would occur in areas closed to wood product harvest; however, woodlands that are open to harvest and available for OHV access would likely have more wood products harvested than areas that are closed to OHV use due to the relative ease of access.

Under Alternative A, approximately 710,359 acres of woodlands would continue to be both open to harvest and managed as limited OHV use.

3.4.6.2.4. Impacts under Alternative B

Under Alternative B, the USDA Forest Service would collaborate with the BEC when selecting and applying all silvicultural treatment (including even-aged harvest and clear-cutting, not exceeding 40 acres). Treatments would be evaluated on a case-by-case basis by the agency forester/silviculturist in coordination with the BEC. This would include the incorporation of Traditional Indigenous Knowledge, which would mean an increased amount of Indigenous information and knowledge being used in management decisions for forests and woodlands as compared to Alternative A.

Management actions in Alternative B, including prohibiting clear cutting except in a few cases, would protect late successional and old-growth forests, help avoid detrimental soil impacts such as erosion, and protect visual resources on NFS lands. This action would likely move forest stands toward a more ecologically resilient condition.

Under Alternative B, all woodlands in BENM would be designated as lands not suited for timber production (i.e., growing, harvesting, and regenerating crops of trees for commercial use); however, timber management would be used as appropriate to provide for the protection of BENM objects. Prohibiting timber production could allow for more wood product harvest by Indigenous people and other members of the public.

Alternative B would have approximately 930,910 acres open to wood product harvest (approximately 68% of the Monument; 16% more than Alternative A), which is the same as Alternatives C and D. Alternative B could result in increased opportunities for the public and Tribal Nations to collect wood products when compared to Alternative A. This increased wood product harvest could thin overgrown forests and reduce fuel load, which could help decrease the risk of larger, hotter wildfires.

Appendix A, Figure 2-2, Areas open and closed to wood product harvest under Alternatives B–D, depicts the areas that would be open or closed to wood product harvest under these three alternatives. Within the area open to wood product harvest, approximately 515,862 acres are actually woodlands according to LANDFIRE. Relative to Alternative A, more acreage is open to wood product harvest and more of that acreage is actually woodlands. This is partially due to the focus of this alternative on removal of encroaching pinyon-juniper woodlands. Many of these areas currently have too low a concentration of pinyon-juniper to be considered woodlands but could transition to woodlands if encroachment is allowed. Opening these areas to wood product harvest would likely slow the process of conversion to pinyon-juniper woodlands.

Table 3-34 shows the woodland types, the total acreages of each woodland type within the Monument, and the acreage and percentage for each woodland type open to harvest under Alternatives B, C, and D.

Table 3-34. Acreage and Percentage of Woodland Type Open to Harvest under Alternatives B, C, and D

Woodland Type	Acreage of Woodland Type within the Monument	Acreage of Each Woodland Type Open to Harvest under Alternative B, C and D	Percentage of Each Woodland Type Open to Harvest under Alternative B, C, and D
Aspen and Aspen-Mixed Conifer Communities	6,858	6,838	~100%

Woodland Type	Acreage of Woodland Type within the Monument	Acreage of Each Woodland Type Open to Harvest under Alternative B, C and D	Percentage of Each Woodland Type Open to Harvest under Alternative B, C, and D
Mixed Conifer-Mountain Shrub Woodlands	2,300	1,655	72%
Mixed Conifer (Dry) Communities	75,174	71,458	95%
Pinyon-Juniper and Gambel Oak Woodlands	648,670	435,233	67%
Developed/Urban Forests	694	678	98%

Same as under Alternative A, the pinyon-juniper and Gambel oak woodland type is the most available woodland type by acreage but the least available woodland type relative to its availability on the Monument. Given the large acreage of pinyon-juniper and Gambel oak woodlands available for harvest, impacts are not expected to be problematic with regard to concentration of harvest in a relatively low proportion of available pinyon-juniper and Gambel oak woodlands.

It is assumed that no wood product harvest would occur in areas closed to wood product harvest; however, woodlands that are open to harvest and available for OHV access would likely have more wood products harvested than areas that are closed to OHV use due to the relative ease of access. For NFS lands only, off-road travel would be allowed within 150 feet of a road. This accessibility could result in the harvest of more wood products. Under Alternative B, approximately 789,428 acres of woodlands would be both open to harvest and managed as limited OHV use. This is approximately 79,066 more acres than under Alternative A and represents the alternative with greatest number of acres of woodlands that are both open to harvest and managed as limited OHV use. As a result, marginally more harvest could be expected under this alternative, relative to Alternative A.

Also of note under Alternative B, the agencies in collaboration with the BEC may add non-mechanized and non-motorized routes through subsequent planning at the activity plan level on a case-by-case basis, consistent with the protection of BENM objects.

3.4.6.2.5. Impacts under Alternative C

Management of forests and woodlands under Alternative C would be the same as described for Alternative B, so the impacts from management decisions would be the same as those for Alternative B.

Alternative C would have approximately 930,910 acres open to wood product harvest (approximately 68% of the Monument; 16% more than Alternative A), which is the same as Alternatives B and D. Alternative C could result in increased opportunities for the public and Tribal Nations to collect wood products when compared to Alternative A. This increased wood product harvest could thin overgrown forests and reduce fuel load, which could help decrease the risk of larger, hotter wildfires.

Under Alternative C, all woodlands in BENM would be designated as lands not suited for timber production, same as Alternative B, and thus have similar impacts to those described under Alternative B.

Appendix A, Figure 2-2, Areas open and closed to wood product harvest under Alternatives B–D, depicts the areas that would be open or closed to wood product harvest under these three alternatives. Within the area open to wood product harvest, approximately 515,862 acres are

actually woodlands according to LANDFIRE. Table 3-34 shows the woodland types, the total acreages of each woodland type within the Monument, and the acreage and percentage for each woodland type open to harvest under these three alternatives. It is assumed that no wood product harvest would occur in areas closed to wood product harvest; however, woodlands that are open to harvest and available for OHV access would likely have more wood products harvested than areas that are closed to OHV use due to the relative ease of access. Under Alternative C, approximately 692,041 acres of woodlands are both open to harvest and managed as limited OHV use. This is approximately 18,318 less acres than under Alternative A and represents the alternative with the second-lowest number of acres of woodlands that are both open to harvest and managed as limited OHV use. As a result, less harvest could be expected under this alternative, relative to Alternative A.

3.4.6.2.6. Impacts under Alternative D

Management of forests and woodlands under Alternative D would be the same as described under Alternative B except that the maximum size opening created by silvicultural treatment in ponderosa pine and mixed conifer forest would be limited on NFS lands to 2 acres. Alternative A limits the maximum size opening created by timber sales to 40 acres unless 1) it is approved by the Regional Forester after a 60-day public review period or 2) it is a salvaging opening created by a natural event such as fire, insect or disease attack, or windthrow. Under Alternative D, the maximum created opening size in northern goshawk habitat is not to exceed 2 acres in ponderosa pine and 1 acre in spruce/fir.

Alternative D would have approximately 930,910 acres open to wood product harvest (approximately 68% of the Monument; 16% more than Alternative A), which is the same as Alternatives B and C. Alternative D could result in increased opportunities for Indigenous people and other members of the public to collect wood products when compared to Alternative A. This increased opportunity to harvest wood products could result in thinning of overgrown forests and reduce fuel load, which could help decrease the risk of larger, hotter wildfires.

Under Alternative D, all woodlands in BENM would be designated as lands not suited for timber production, same as Alternative B, and thus have similar impacts to those described under Alternative B.

Appendix A, Figure 2-2, Areas open and closed to wood product harvest under Alternatives B–D, depicts the areas that would be open or closed to wood product harvest under these three alternatives.

It is assumed that no wood product harvest would occur in areas closed to wood product harvest; however, woodlands that are open to harvest and available for OHV access would likely have more wood products harvested than areas that are closed to OHV use due to the relative ease of access. Under Alternative D, approximately 375,620 acres of woodlands are both open to harvest and managed as limited OHV use. This is approximately 334,739 fewer acres than under Alternative A and represents the alternative with the fewest acres of woodlands that are both open to harvest and managed as limited OHV use. As a result, the least amount of harvest could be expected under this alternative, relative to Alternatives A, B, and C. With fewer acres available for OHV use in areas open to wood product harvest than under Alternatives A, B, and C, Alternative D would most reduce the risk of excessive wood product harvest or damage from off-road OHV use in woodlands.

3.4.6.2.7. Impacts under Alternative E

Alternative E is the alternative that most emphasizes and implements collaboration with the BEC and Tribal Nations. No areas are designated as open or closed to wood product harvest under this alternative; those areas would be designated at a later date through collaboration with the BEC.

Under Alternative E, all woodlands in BENM would be designated as lands not suited for timber production, same as Alternative B, and thus have similar impacts to those described under Alternative B.

Under Alternative E, wood product harvest would be allowed through an authorization system within designated harvest areas. In collaboration with the BEC, harvest areas would be designated with emphasis on areas with pinyon and juniper encroachment and where site-specific analysis indicates that harvest would be useful for restoration of the diversified vegetative community, for protection of the sagebrush ecosystem, where effects to co-occurring species can be minimized, where cultural resources can be avoided in the harvest, and where the removal of pinyon and juniper is deemed necessary. This is a more woodland type-specific and stand-specific approach than under Alternative A and could reduce overall pinyon-juniper encroachment. Commercial timber harvest would be allowed only if deemed necessary to protect BENM objects, whereas Alternative A allows commercial harvest in woodlands suitable for it. Under Alternative E, less commercial harvest would occur.

Under Alternative E, the agencies and the BEC would monitor populations and locations of traditionally harvested trees and their uses and impacts to vegetation and wildlife species. Wood product use would be opened or closed permanently or on a seasonal or multiyear basis to allow for resource rest. This is more of an adaptive management approach (involving both monitoring and changes to management based on monitoring data) than under Alternative A. Adaptive management may reduce impacts to resources because it allows for management changes when impacts are first observed through monitoring, rather than waiting until accumulated resource impacts are generally visible. Wood product use would be excluded under Alternative E from all developed recreation sites, livestock/wildlife exclosures, cultural resources sites, floodplains, riparian and aquatic areas, and springs except where inconsistent with the Religious Freedom Restoration Act and other applicable laws. This would result in decreased access for Indigenous people and other members of the public to harvest areas when compared to Alternative A but would likely protect these areas from overharvest or other resource damage. For Indigenous people, however, private collection of wood products would not be prohibited where such prohibition constitutes a substantial burden on religious practices.

Under this alternative, clear-cutting for timber harvest on the Monument would be prohibited, which could prevent the encroachment of noxious weeds, visual impacts, soil erosion, and potential monoculture regrowth in clear-cut areas. Clear-cutting for timber harvest would be allowed under Alternative A in woodlands with the potential for insect infestation or disease. In such cases clear-cutting can be a valuable tool for forest management. Under this alternative, other methodologies would be used and could be less effective in certain circumstances.

If Alternative E is selected, the acreages of areas open and closed to wood product harvest would be determined by the agencies in collaboration with the BEC. The selected acreages open to wood product harvest would determine the level of woodland resources available for harvest by Indigenous people and other members of the public.

3.4.6.2.8. Cumulative Impacts

The BLM-administered lands, NFS lands, and state, Tribal, county, and privately owned lands surrounding BENM are the cumulative effects analysis area for forestry and wood products management. Ongoing and planned actions in and near BENM would influence the effectiveness of the management of forestry and wood products on a regional scale (see Appendix J). The time frame for cumulative environmental consequences for future actions is the life of the RMP/EIS.

The cumulative impacts of past and present management actions on woodlands in the Planning Area are captured in the description of the affected environment.

RFFAs in BENM have the potential to impact forestry and wood products management; these are generally projects that would increase or decrease the size of designated wood product harvest areas, access to designated wood product harvest areas, or vegetation treatment projects that would improve forest health.

BLM projects that could impact forestry and wood product management consist of the Bluff River Trail, Flats Water Wells and Kane Fence, Beef Basin and Dark Canyon Plateau Range Improvements, Mancos Mesa Right-of-Way Access, Hamburger Rock Campground Improvements and Expansion (DOI-BLM-UT-Y020-2021-0017-EA), and the Goosenecks Campgrounds and Trails project.

USDA Forest Service projects that could affect woodlands consist of the North Elk Ridge Forest Health Project, Mormon Pasture Mountain Wildlife Habitat Improvement Project, Maverick Point Project, Abajo-BENM Watershed Restoration Project, South Elk Ridge Aspen Restoration Project, and the Dark Canyon Wilderness/Peavine Corridor. All of the USDA Forest Service projects, with the exception of the Dark Canyon Wilderness/Peavine Corridor, have the goal of restoring forest or wildlife habitat health and would likely result in positive cumulative benefits to woodlands.

Proposed forestry and wood product harvest management activities under the action alternatives would contribute to the cumulative effects of regional fire and fuels management by other agencies and stakeholders. Regional fire and fuels management efforts would contribute to maintaining and restoring forest and woodland health to protect watershed values, support wildlife habitat requirements, and reduce the potential for catastrophic wildfires. Action alternatives that prioritize forest restoration and woodland health could have greater contributions toward these effects.

3.4.7. *Lands with Wilderness Characteristics (applies to BLM-administered lands only)*

3.4.7.1. AFFECTED ENVIRONMENT

Although the BLM's authority under FLPMA Section 603 (43 USC 1782) expired in 1991, Congress gave the BLM broad authority and discretion under other sections of FLPMA, aside from Section 603, to identify LWC and, if appropriate, to manage lands to protect such characteristics. Under FLPMA Section 201, and later per guidance outlined in BLM Manual 6310 (BLM 2021a), the BLM began updating findings for LWC within Utah in 1999 (BLM 1999). The BLM is currently working on verification and re-inventory to further identify areas in the Monument that contain LWC.

In the 2008 Monticello RMP, some LWC managed to protect wilderness characteristics were referred to as natural areas. Throughout the current planning process, these areas will be administratively identified as LWC in accordance with BLM Manual 6320 (BLM 2021b).

BLM Manual 6320 allows the BLM discretion to manage LWC that may result in a variety of outcomes, including, but not limited to, the following:

8. Allowing for other multiple uses in an area while not protecting wilderness characteristics
9. Minimizing impacts on wilderness characteristics via management restrictions (e.g., terms and conditions of use or stipulations) while emphasizing other multiple uses
10. Protecting wilderness characteristics while providing for compatible multiple uses

The BLM may choose any one of these outcomes, or some combination thereof, for a parcel of land possessing wilderness characteristics, provided that the land use plan documents the basis for this determination.

The Utah BLM planning team began inventorying LWC subsequent to the passage of FLPMA. The results of those inventories were compiled in the BLM Utah Initial Wilderness Inventory Proposals (April 1979) and the BLM Utah Final Initial Wilderness Inventory (August 1979). Areas found to have wilderness characteristics were established as WSAs in the BLM Intensive Wilderness Inventory Final Decision on Wilderness Study Areas (November 1980), at which time a new study phase was begun for those lands and other lands were dropped from WSA consideration. In response to ongoing public debate, in 1996 the Secretary of the Interior directed a new field review of disputed lands dropped in the 1980 decision, which was published as the 1999 Utah Wilderness Inventory, and modified slightly by the Monticello Field Office Revisions to the 1999 Utah Wilderness Inventory (May 2003). In preparation for the 2008 Monticello RMP, the IDT performed a desktop review in 2007 of some of the lands considered in the 1999 review. In the interim, unit-specific reviews have been triggered by public submissions, including in the Lockhart Basin and Tabernacle Units.

Approximately 419,128 acres have been found to possess wilderness characteristics in the Monument. The data listed in Table 3-35 and Appendix A, Figure 3-25, Lands with wilderness characteristics within BENM, reflect the status of the ongoing inventory of BLM-administered LWC.

Table 3-35. Lands with Wilderness Characteristics within Bears Ears National Monument

1979 Unit ID	1999 Unit ID	2007 Unit ID	Acres Found to Possess Wilderness Characteristics
Not Inventoried	San Juan River	San Juan River	2,513
Not Inventoried	No 1999 Inventory	Hammond Canyon	4,617
Not Inventoried	Dark Canyon Unit 2	Dark Canyon	1,655
Not Inventoried	Dark Canyon Unit 3	Dark Canyon	8,930
Not Inventoried	Fish and Owl Creeks Unit	Fish and Owl Creeks	4,915
UT-060-164	No 1999 Inventory	Indian Creek B	312
UT-060-164	Indian Creek Unit 4	Indian Creek	8,079
UT-060-164	No 1999 Inventory	Indian Creek A	3,918
UT-060-164	Indian Creek Unit 3	Indian Creek	2,632
UT-060-43	Hatch/Lockhart/Hart	Hatch/Lockhart/Hart	71
UT-060-143	No 1999 Inventory	Hatch Lockhart Hart 3	1,493
UT-060-143	No 1999 Inventory	Hatch/Lockhart/Hart	355
UT-060-143	Hatch/Lockhart/Hart	Hatch/Lockhart/Hart	200

1979 Unit ID	1999 Unit ID	2007 Unit ID	Acres Found to Possess Wilderness Characteristics
UT-060-143	Gooseneck	Gooseneck	3,568
UT-060-143	Lockhart Additions	Lockhart Additions	17
UT-060-143	No 1999 Inventory	Lockhart Basin	7,476
UT-060-143	Indian Creek Unit 1	Indian Creek	3,725
UT-060-143	No 1999 Inventory	Harts Point	13,449
UT-060-143	No 1999 Inventory	Lockhart Additions	179
UT-060-143	No 1999 Inventory	Lockhart Additions	372
UT-060-143	No 1999 Inventory	Lockhart Basin	1,039
UT-060-162	Harts Point	Harts Point	8,404
UT-060-164	Indian Creek Unit 2	Indian Creek	4,927
UT-060-165	Bridger Jack Mesa Unit 1	Bridger Jack Mesa	6,090
UT-060-165	Bridger Jack Mesa Unit 1	Bridger Jack Mesa	3,629
UT-060-165	No 1999 Inventory	Bridger Jack Mesa	570
UT-060-166	Bridger Jack Mesa Unit 2	Bridger Jack Mesa	7,703
UT-060-167	Bridger Jack Mesa Unit 3	Bridger Jack Mesa	2,031
UT-060-167	Bridger Jack Mesa Unit 3	Bridger Jack Mesa	0
UT-060-167	Bridger Jack Mesa Unit 3	Bridger Jack Mesa	5,035
UT-060-168	No 1999 Inventory	Shay Mountain A	6,783
UT-060-169	Butler Wash Unit 4	Butler Wash	355
UT-060-170	Butler Wash Unit 2	Butler Wash Unit 2	858
UT-060-170	Butler Wash Unit 1	Butler Wash	362
UT-060-170	Dark Canyon Unit 3	Dark Canyon	15,977
UT-060-171	Dark Canyon Unit 3	Dark Canyon	11,595
UT-060-171	Dark Canyon Unit 3	Dark Canyon	110
UT-060-171/73	Dark Canyon Unit 2	Dark Canyon	2,771
UT-060-172	Dark Canyon Unit 2	Dark Canyon	39
UT-060-173	Dark Canyon Unit 2	Dark Canyon	3,365
UT-060-174	No 1999 Inventory	Fable Valley Plateau	0
UT-060-174	Dark Canyon Unit 2	Dark Canyon	130
UT-060-174	Dark Canyon Unit 2	Dark Canyon	2,197
UT-060-176	No 1999 Inventory	Dark Canyon 16	0
UT-060-176	Dark Canyon Unit 2	Dark Canyon	7,216
UT-060-177	Dark Canyon Unit 1	Dark Canyon	12,746
UT-060-178	Fort Knocker Canyon	Fort Knocker Canyon	12,738
UT-060-179	Gravel & Long Canyons	Gravel & Long Canyons	37,098
UT-060-179	No 1999 Inventory	White Canyon 9	1,232
UT-060-179	No 1999 Inventory	White Canyon	6,424
UT-060-180	No 1999 Inventory	Blue Notch	483
UT-060-180	No 1999 Inventory	Upper Red Canyon A	2,450

1979 Unit ID	1999 Unit ID	2007 Unit ID	Acres Found to Possess Wilderness Characteristics
UT-060-181	Mancos Mesa	Mancos Mesa	8,081
UT-060-181	Mancos Mesa	Mancos Mesa	5,030
UT-060-186	Nokai Dome Unit 3	Nokai Dome East	18,629
UT-060-186	Nokai Dome Unit 3	Nokai Dome	4,687
UT-060-187	Grand Gulch Unit 3	Grand Gulch	13,700
UT-060-187	Grand Gulch Unit 3	Grand Gulch	15,061
UT-060-187	Grand Gulch Unit 3	Grand Gulch	87
UT-060-188	Grand Gulch Unit 4	Grand Gulch	2,841
UT-060-188	Grand Gulch Unit 2	Grand Gulch	358
UT-060-188	No 1999 Inventory	Grand Gulch B	645
UT-060-191	Cheesebox Canyon Unit 4	Cheesebox Canyon	2,307
UT-060-191	No 1999 Inventory	White Canyon 8	387
UT-060-191	Cheesebox Canyon Unit 2	Cheesebox Canyon	1,855
UT-060-194	Harmony Flat	Harmony Flat	9,960
UT-060-195	No 1999 Inventory	Grand Gulch A	7,658
UT-060-195	Road Canyon Unit 1	Road Canyon	1,253
UT-060-195	Fish and Owl Creeks Unit	Fish and Owl Creeks	4,493
UT-060-195	Grand Gulch Unit 1	Grand Gulch	9,275
UT-060-197	Grand Gulch Unit 5	Grand Gulch	4,296
UT-060-198	Grand Gulch Unit 8	Grand Gulch	1,190
UT-060-198	Grand Gulch Unit 10	Grand Gulch	93
UT-060-198	Grand Gulch Unit 7	Grand Gulch	798
UT-060-200	No 1999 Inventory	Valley of the Gods A	14,021
UT-060-201	No 1999 Inventory	Road Canyon	186
UT-060-201	Road Canyon Unit 3	Road Canyon	246
UT-060-201	Road Canyon Unit 6	Road Canyon	101
UT-060-201	Road Canyon Unit 2	Road Canyon	991
UT-060-201	Road Canyon Unit 6	Road Canyon	8,201
UT-060-201	Road Canyon Unit 5	Road Canyon	534
UT-060-201	Road Canyon Unit 3	Road Canyon	415
UT-060-202	No 1999 Inventory	Lime Creek	5,756
UT-060-204	Fish and Owl Creeks Unit	Fish and Owl Creeks	68
UT-060-204	Fish and Owl Creeks Unit	Fish and Owl Creeks	894
UT-060-204	Fish and Owl Creeks Unit	Fish and Owl Creeks	1,240
UT-060-204	Fish and Owl Creeks Unit	Fish and Owl Creeks	13,235
UT-060-205	No 1999 Inventory	Arch Canyon 4	40
UT-060-208	Comb Ridge	Comb Ridge	14,052
UT-060-241	Cheesebox Canyon Unit 3	Cheesebox Canyon	9,547
UT-060-243	Sheep Canyon	Sheep Canyon	4,084

1979 Unit ID	1999 Unit ID	2007 Unit ID	Acres Found to Possess Wilderness Characteristics
Total			419,128

Source: BLM and USDA Forest Service GIS (2022).

Public interest and use throughout BENM are expected to increase in the future, potentially altering the landscape in some areas. With these alterations, there will be a need for recurring, updated inventories of LWC to evaluate if wilderness characteristics are still present. Goals and objectives for this resource are to protect, maintain, and preserve wilderness characteristics, considering consistency with this RMP/EIS and any implementation-level planning; to provide access for traditional, cultural, and ceremonial practices for Indigenous people; and, in the context of competing resource demands, to collaborate with the BEC regarding proposed designations that preserve wilderness characteristics to ensure that the designation is guided by Traditional Ecological Knowledge and Indigenous expertise.

3.4.7.2. ENVIRONMENTAL CONSEQUENCES

3.4.7.2.1. Issue

- How would proposed land use allocations and discretionary uses affect the apparent naturalness, size, and outstanding opportunities for solitude or primitive and unconfined recreation of LWC?

3.4.7.2.2. Impacts under Alternative A

Under Alternative A, the BLM would continue to manage the following 48,954 acres (approximately 5% of the Decision Area) of LWC to protect their wilderness characteristics (see Appendix A, Figure 2-3, Alternative A, lands with wilderness characteristics):

- Dark Canyon: 11,595 acres
- Mancos Mesa: 5,030 acres
- Nokai Dome East: 18,629 acres
- Grand Gulch: 13,700 acres

Under Alternative A, the BLM would continue to manage the remaining 370,174 acres of LWC to allow for other uses that would not protect wilderness characteristics.

Under Alternative A, OHV travel would continue to be limited to designated roads and trails in both protected LWC and in non-protected LWC. Cross-country OHV use would generally be prohibited in both protected and non-protected LWC. Under all alternatives, new route designations in limited OHV areas would be possible only if, in accordance with Proclamation 9558, which is incorporated into Proclamation 10285, those routes are for the purposes of public safety or protection of Monument objects and values. In protected LWC, the likelihood of new OHV route designations that both meet these requirements and preserve wilderness characteristics is very low, so it is unlikely that new routes would be designated. In non-protected LWC, the possibility of new OHV route designations is higher but still remains low because of the general limitations on new route designations in the Proclamation. The use of OHV routes can impact an LWC area's apparent naturalness from route widening or braiding, vegetation loss, increased erosion, wildlife disturbances, degraded water quality, introduction of noxious weeds, and damage to cultural resources. Outstanding opportunities for solitude and primitive, unconfined recreation can be degraded by the noise and dust of motor vehicles and increased presence of other visitors. While the use of OHVs on designated routes that existed at the time the LWC were inventoried can impact

naturalness and opportunities for solitude and primitive, unconfined recreation, those impacts are particularly pronounced when associated with use of routes that were newly designated for use after the LWC were inventoried.

Under Alternative A, protected LWC would continue to be managed as ROW avoidance areas. By comparison, non-protected LWC would be managed as either ROW avoidance or ROW open areas. ROW avoidance areas provide protection of wilderness characteristics by encouraging ROW development outside avoidance areas when feasible. Where it does occur within LWC, land use authorizations, either in ROW avoidance or ROW open areas, may lead to surface disturbance and a corresponding degradation of apparent naturalness and outstanding opportunities for solitude or primitive, unconfined types of recreation. Per BLM policy, developed ROWs create a boundary within an LWC unit. If an approved ROW were to bisect an LWC unit, it would reduce the overall LWC acreage through direct surface disturbances. If a bisected portion of the LWC unit falls below 5,000 acres in size, it may no longer meet the minimum size criteria for LWC status (BLM 2021a). Therefore, authorizing ROWs within LWC units has the potential to cause indirect loss of more LWC acres than are directly impacted by physical surface disturbances. While the risk of such loss is higher in ROW open areas in non-protected LWC, that risk is mitigated in part by requirement that authorizations in BENM must be consistent with the protection of Monument objects, which generally limits the nature and scope of the ROWs that could be authorized within the Monument.

Under Alternative A, 48,954 acres of protected LWC would be managed as VRM Class II. The objective of this class is to retain the existing character of the landscape but permit a low level of change. Management activities could be seen in these areas but must not attract the attention of the casual observer. This would preserve the apparent naturalness of protected LWC. In all, 370,174 acres of non-protected LWC would be managed as a combination of VRM Class I, II, III and IV. VRM Class III and IV allow for a moderate to high level of change to the existing character of the landscape. Impacts to apparent naturalness in LWC are more likely under VRM Class III and much more likely under VRM Class IV. Direct surface disturbances to the characteristic landscape are likely to result in a reduction in LWC acreage from loss of naturalness. Cumulative impacts from the loss of apparent naturalness may result in an LWC area no longer possessing wilderness characteristics.

Under Alternative A, 48,954 acres of protected LWC would continue to be available to range, watershed, or habitat improvements and vegetation treatments if they are beneficial or non-impairing of the wilderness characteristics and would meet the VRM Class II objectives. Short-term impacts from these actions can occur to outstanding solitude and primitive, unconfined recreation from the presence of work crews, motor vehicle or machinery use, noise disturbance, and dust. Maintaining range, watershed, or habitat infrastructure could result in both positive and impacts to apparent naturalness due to human development, surface disturbance, and manipulation of the ecosystem. For example, maintaining range improvements supports continued grazing but creates better livestock distribution and may prevent degradation of riparian areas and cultural sites. Wildlife guzzlers can benefit species at risk but may also support a nonnative game population that attracts hunters and littering or creates a focal point for predators. Watershed or vegetation treatments may remove certain native species but may also enhance biodiversity and protect an area from invasive plants or unnatural wildfires driven by climate change. Within protected LWC, potential impacts to apparent naturalness from these actions would be less likely to occur than in non-protected LWC due to the requirements to preserve wilderness characteristics. Within non-protected LWC, range, watershed, or habitat improvements and vegetation treatments could be implemented to the extent they are consistent with the protection of Monument objects and the specific VRM prescription for the area, but they would not be required to be beneficial or non-impairing to wilderness characteristics. As a result, surface-disturbing activities or developments

may be more likely to occur within non-protected LWC, with a commensurate higher potential for impacts to apparent naturalness and outstanding solitude or primitive, unconfined recreation.

Protected LWC would be unavailable for private and commercial wood product harvest except for on-site collection of dead wood for campfires. These actions would protect apparent naturalness and outstanding opportunities for solitude or primitive, unconfined recreation by preventing additional human presence, OHV or machinery noise, loss of organic material, and surface disturbances. In non-protected LWC, private and commercial wood product harvest would be allowed and could result in impacts to apparent naturalness and outstanding opportunities for solitude or primitive, unconfined recreation due to presence of others, OHV or machinery noise, cut tree stumps or slash piles, and unauthorized OHV route proliferation. In some cases, areas cleared of dead standing trees can later become permanent dispersed camping sites.

The effectiveness of fire suppression is dependent on national preparedness levels, available fire crews, predicted fire behavior, weather, resource values at risk, and firefighter safety. In all cases, protection of life and property would take priority over other resource concerns. Depending on circumstances, fire suppression within protected LWC would utilize light-on-the-land or Minimum Impact Suppression Tactics (MIST) techniques that would help preserve apparent naturalness by reducing surface disturbances that could result from more aggressive, mechanized methods of fire suppression such as constructing fire lines with bulldozers or other heavy equipment; establishing fire camps, helicopter pads, dip sites, or vehicle staging areas; heavy use of aircraft landings and fire retardant; and conducting large-scale back burns. Employing MIST within protected LWC would endeavor to minimize heavy equipment or motor vehicles, place fire camps and staging areas outside LWC, minimize the use of aircraft landing and fire retardant drops, and emphasize the use of hand crews, wildland fire monitoring, indirect attack, smaller back burns, and post-fire rehabilitation. Use of MIST, however, may cause fire containment to take longer to achieve and possibly result in larger overall burn areas that need to be rehabilitated. Use of MIST is not always possible due to periods of extreme fire behavior, values at risk, or lack of sufficient suppression resources. In non-protected LWC, lack of MIST use can result in more short-term impacts to naturalness, solitude, and primitive, unconfined recreation from surface disturbances such as fire camps, staging areas, motor vehicle or heavy equipment use, dozer line construction, cut vegetation, aircraft landings, fire retardant drops, and large burnouts. Not using MIST can result in a more immediate need for post-fire emergency stabilization and rehabilitation (ESR) due to more surface disturbances. More post-fire ESR may result in more short-term impacts to solitude and primitive, unconfined recreation due to the presence of work crews and use of motor vehicles, mechanized equipment, and aircraft.

3.4.7.2.3. Impacts under Alternative B

Under Alternative B, the BLM would manage 97,403 acres (approximately 9% of the Decision Area) of LWC to protect their wilderness characteristics (see Appendix A, Figure 2-4, Alternatives B and C, lands with wilderness characteristics). Under Alternative B, the BLM would manage 321,725 acres of LWC to not protect their wilderness characteristics. Compared with Alternative A, there would be nearly two times (48,449 more acres) as many acres of protected LWC under this alternative. The additional protection of LWC under this alternative would better preserve the existing landscape that is sacred and culturally significant to the Indigenous people who share deep connections to BENM.

The impacts to LWC from OHV use under Alternative B are similar to those as described under Alternative A. The primary difference is that the likelihood of new OHV routes being designated would be slightly less because 48,449 more acres of LWC would be managed for the protection of

wilderness characteristics. Because of that management, any new route designation in the additional protected LWC acres would have to be consistent with the protection of the wilderness characteristics and would have to be for the purposes of public safety or the protection of Monument objects.

Under Alternative B, 48,449 more acres of protected LWC would be managed as ROW avoidance than under Alternative A. Although not an exclusion, ROW avoidance reduces the likelihood of short-and long-term disturbances associated with ROW development that could result in a loss of apparent naturalness and degradation of outstanding opportunities for solitude or primitive and unconfined types of recreation, as described under Alternative A.

Under Alternative B, 48,449 more acres of protected LWC would continue to be managed as VRM Class II. The objective of this class is to retain the existing character of the landscape but permit a low level of change. Management activities could be seen in these areas but must not attract the attention of the casual observer. This would better preserve the apparent naturalness of protected LWC from potential surface-disturbing activities. In all, 349,839 acres of non-protected LWC would be managed mostly as VRM Class II but with a few small corridors of VRM Class III near existing roads. Impacts to apparent naturalness, solitude, and primitive, unconfined recreation in non-protected LWC under VRM Class II would be more likely than in protected LWC due to the lack of a requirement to preserve or enhance wilderness characteristics. Overall, impacts to LWC are likely to be less than under Alternative A because Alternative B manages only a fraction of LWC acres as VRM Class III and does not manage any LWC acres as VRM Class IV, preventing most moderate and all high levels of change to the existing character of the landscape. Direct surface disturbances to the characteristic landscape are likely to result in a reduction in LWC acreage from loss of naturalness. Cumulative impacts from the loss of apparent naturalness may result in an LWC area no longer possessing wilderness characteristics.

Protected LWC would be available for range and watershed improvements, habitat improvements, and vegetation treatments under Alternative B, if such actions are beneficial or non-impairing of the wilderness characteristics and would meet VRM Class II objectives. Within non-protected LWC, range, watershed or habitat improvements, and vegetation treatments could be implemented if they are consistent with the protection of Monument objects and the specific VRM prescription for the area, but they would not be required to be beneficial or non-impairing to wilderness characteristics. As a result, surface-disturbing activities or developments may be more likely to occur within non-protected LWC, with a commensurate higher potential for impacts to apparent naturalness and outstanding solitude or primitive, unconfined recreation.

Alternative B would exclude 48,449 more acres of protected LWC than Alternative A from commercial wood product harvest, although private wood product harvest would be allowed if determined beneficial or non-impairing to wilderness characteristics and compliant with VRM Class II objectives. Impacts to LWC from wood product harvest would be similar to but less than those described in Alternative A because more acres would be excluded from commercial wood product harvest, which can involve larger vehicles and machinery, larger crews, more noise and surface disturbances, and more slash left behind.

Under Alternative B, light-on-the-land or MIST fire suppression techniques would be emphasized on 48,449 more acres than under Alternative A. The impacts on LWC from fire suppression would be the same as those described in Alternative A.

3.4.7.2.4. Impacts under Alternative C

The BLM would manage the same 97,403-acre area (approximately 9% of the Decision Area) of protected LWC under Alternative C as listed under Alternative B (see Appendix A, Figure 2-4, Alternatives B and C, lands with wilderness characteristics). Impacts would be similar to those described under Alternative B, with some exceptions.

Under Alternative C, protected LWC would be managed as closed to OHV use. Compared with Alternative A, this would provide more protection for wilderness characteristics by preventing the designation of new OHV routes and reducing the potential for increased OHV impacts to naturalness, outstanding solitude, and primitive, unconfined recreation. In all, 349,839 acres of non-protected LWC would be managed as OHV limited areas with the same travel management actions common to all alternatives. Although new route designations would be possible in non-protected LWC, cross-country OHV travel would generally be prohibited, and new routes designations would only be allowed in the limited circumstances where such designations are necessary for the purposes of public safety or protection of Monument objects.

Protected LWC would be managed as ROW exclusion areas, preventing the previously described impacts to LWC from ROW development under Alternative A. In all, 349,839 acres of non-protected LWC would be managed as ROW avoidance areas, and impacts would be similar to those described under Alternative A.

Under Alternative C, protected LWC would be managed as VRM Class I. The objective of this class is to preserve the existing character of the landscape. VRM Class I permits only very low levels of change to the landscape, and any changes must not attract attention. Non-protected LWC would be managed as VRM Class II. Compared with Alternatives A or B, wilderness characteristics in protected LWC would be better preserved under this alternative because VRM Class I objectives would substantially restrict most types of surface-disturbing activities. Impacts to non-protected LWC would be similar those described in Alternatives A and B.

3.4.7.2.5. Impacts under Alternative D

Under Alternative D, the BLM would manage 419,128 acres (approximately 39% of the Decision Area) as protected LWC and no acres as non-protected LWC (see Appendix A, Figure 2-5, Alternatives D and E lands with wilderness characteristics). Impacts to protected LWC would be of a similar nature to those described under Alternative C due to the same management prescriptions, but the level of impacts should be reduced due to more acreage being managed for the preservation of wilderness characteristics. Compared with Alternative A, there would be over eight times (370,174 more acres) as many acres managed as protected LWC under this alternative.

Under Alternative D, all LWC in the Monument would be closed to OHV use. These areas would include approximately 315 currently designated route segments that are longer than 50 feet comprising approximately 190 miles. Although some of these routes are rarely used, several are challenging OHV trails or short spurs leading to dispersed campsites. Closing these areas to OHV use would reduce impacts to apparent naturalness and increase the outstanding opportunities for solitude by restricting the sight and sound of OHV use. However, closing these areas to OHV use would also reduce opportunities for primitive and unconfined motorized and non-motorized recreation by making remote trailheads, dispersed camping, and rugged OHV opportunities less accessible. Closing OHV routes in protected LWC could concentrate dispersed camping to fewer areas, which could result in increased impacts in other public lands adjacent or proximate to protected LWC.

Under Alternative D, all LWC in the Monument would be closed to recreational shooting. Closing these areas to recreational shooting would reduce impacts to outstanding opportunities for solitude and primitive, unconfined recreation and apparent naturalness from restricting shooting noise, the presence of trash, and bullet damage to rocks, soil, and vegetation. Prohibiting recreational shooting in LWC would also protect BENM objects from bullet impacts and noise disturbance to sensitive resources, such as cultural sites and wildlife habitat. The use of firearms for the lawful pursuit of game would still be permissible.

Under Alternative D, all LWC in the Monument would be managed as VRM Class 1 and ROW exclusion zones. Potential impacts would be the same as described for protected LWC in Alternative C.

Under Alternative D, the management prescriptions and impacts associated with protected LWC under Alternative C for wood product harvest, vegetation, range, watershed or habitat improvements, and fire suppression would apply to all LWC in the Monument. As a result, LWC would be substantially less impacted by these activities under Alternative D than it would under Alternative A.

Overall, the additional conservation of LWC under this alternative would better preserve the existing landscape that is sacred and culturally significant to the Tribal Nations who share deep connections to BENM.

3.4.7.2.6. Impacts under Alternative E

Like Alternative D, Alternative E would manage 419,128 acres of LWC in the Monument (approximately 39% of the Decision Area) as protected LWC and no acres as non-protected LWC (see Appendix A, Figure 2-5, Alternatives D and E, lands with wilderness characteristics). Additional standards for wilderness characteristics and lands that meet these characteristics would be developed in collaboration with the BEC to ensure that standards are guided by Traditional Ecological Knowledge and Indigenous expertise. Compared with Alternative A, there would be 370,174 more acres of protected LWC under this alternative. The additional standards under this alternative would better preserve the existing landscape that is sacred and culturally significant to the Indigenous people who share deep connections to BENM. Impacts would be similar to those described under Alternative D due to similar management prescriptions with the exception that OHV travel would be managed as limited within lands managed to protect with wilderness characteristics rather than closed when compared to Alternative D.

Under Alternative E, limitations on management actions and recreation would be designed in collaboration with the BEC to ensure that standards are guided by Traditional Ecological Knowledge and Indigenous expertise. Permit requirements, group size limits, restrictions on camping, and encouraging visitors to stay on trails would reduce impacts to apparent naturalness and Monument objects such as cultural resources; however, these same restrictions may also reduce opportunities to experience outstanding solitude or primitive, unconfined recreation. Encouraging visitors to stay on existing trails and in campsites may impact overall experiences in protected LWC.

Under Alternative E, all LWC in the Monument would be managed as VRM Class 1 and ROW exclusion zones. Potential impacts would be the same as described for protected LWC in Alternative C.

Under Alternative E, the management prescriptions and impacts associated with protected LWC under Alternative C for wood product harvest, vegetation, range, watershed or habitat improvements, and fire suppression would apply to all LWC in the Monument. As a result, LWC

would be substantially less impacted by these activities under Alternative E than they would under Alternative A. Recreational shooting prohibitions and impacts would be the same as Alternative D.

3.4.7.2.7. Cumulative Impacts

Past and present actions in the cumulative impacts analysis area that have affected lands with wilderness characteristics include grazing, utility and infrastructure development, and recreation and travel management, as these activities affect the naturalness and outstanding opportunities for solitude and primitive, unconfined recreation. RFFAs would have similar effects to the extent that they occurred within lands with wilderness characteristics units (see Appendix J).

Continued increases in visitor use of BENM would continue to affect lands with wilderness characteristics. Recreational use and developments and ROWs, including the Hamburger Rock Campground Improvements and Expansion (2 acres), Goosenecks Campground and Trails (12 acres), reconstruction of the Salt Creek Trail (<1 mile of trail), and ROW for the Red Canyon water well (0.25 acre), would create alterations to the landscape over time through an increase in human presence, vehicle use, and road use in certain areas. Although the effects on minor features from these uses may be substantially unnoticeable, they could cumulatively affect the area's apparent naturalness if they lead to increased use within LWC. This includes RFFAs such as the construction of the Bluff River Trail and developed recreation facilities to the extent where overlap occurs with protected LWC.

3.4.8. Wild and Scenic Rivers

WSRs are streams or segments of streams designated by Congress under the authority of the Wild and Scenic Rivers Act of 1968 (PL 90-542, as amended; 16 USC 1271–1287) for the purpose of preserving the stream or stream segment in its free-flowing condition, preserving water quality, and protecting its ORVs. Only Congress can designate streams for inclusion in the NWSR System. ORVs are identified on a segment-specific basis and may include scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values. Section 5(d)(1) of the Wild and Scenic Rivers Act directs federal agencies to consider potential WSRs through their land use planning process. During planning efforts, the BLM reviews all streams within its jurisdiction and evaluates their eligibility, suitability, and tentative classification. The three types of tentative classification are wild, scenic, and recreational. The tentative classification is based on the degree of human development currently along an eligible river and is used as a guide for future management activities.

Natural sources of water are viewed as interconnected and the home of deities or spiritual beings to Indigenous peoples (see Appendix L). The Zuni see water as a complex, interrelated, and dynamic system, and as a life-giving force that—in and of itself—is living and alive. The Navajo cultural landscape holds stories of the value of water and connections with rivers, springs, creeks, and areas where water collects in stone basins. The Ute people were drawn to the Bears Ears region by the rich resources of the mountains and rivers. The two major rivers associated with BENM are the Colorado and the San Juan, and they and their tributaries make up the watersheds that are important to life. These rivers also comprise aspects of Indigenous histories (see Appendix L). The Colorado River (*Pisisvayu*) and San Juan River (*Yotse'vayu*) are important in the history and traditions of many Hopi clans. The San Juan River is significant in the migration histories of numerous Hopi clans, while the Colorado River is significant for its association with important Hopi creation traditions, clan histories, and ongoing religious activities. The San Juan and Colorado Rivers also defined the territories of different bands of Utes (see Appendix L).

Management of river segments to preserve ORVs, particularly in WSR classifications, may be in concert with Indigenous perspectives on the value of natural water sources.

3.4.8.1. AFFECTED ENVIRONMENT

Evaluation and study of potentially eligible and suitable WSR segments on the Manti-La Sal National Forest was conducted through one previous eligibility study (2003), two re-evaluations to the eligibility study (2006 and 2007), and one suitability study (2008). In the 2007 re-evaluation, four NFS river segments within or partially within the Planning Area were identified as eligible for inclusion in the NWSR System but were found not suitable (USDA Forest Service 2008). These suitability determinations are documented in the 2008 *Record of Decision and Forest Plan Amendments. Wild and Scenic River Suitability Study for National Forest System Lands in Utah. Ashley, Dixie, Fishlake, Manti-La Sal, and Uinta-Wasatch-Cache National Forests* (USDA Forest Service 2008). Since the completion of the suitability study, the USDA Forest Service was given new criteria for evaluating WSRs (USDA Forest Service 2015). This direction requires that all “named streams” on the 7.5-minute USGS quadrangles be evaluated. An evaluation of additional streams in the Manti-La Sal National Forest was conducted in 2017 and 2018. No NFS streams within the BENM boundary were identified as eligible during this process.

A systematic evaluation and study of potentially eligible and suitable WSR segments within the BLM-administered portion of the Planning Area was conducted as part of the 2008 Monticello RMP planning process. Nine BLM-administered river segments within or partially within the Planning Area were identified as eligible for inclusion in the NWSR System. Of the nine identified eligible river segments within or partially within the BLM portion of the Planning Area, four segments were found suitable, and five segments were found not suitable, for inclusion in the NWSR System. The suitability determinations for these segments are documented in the 2008 Monticello RMP. Table 3-36 displays the suitable WSR segments found in the Planning Area. In total, approximately 31.46 miles of river segments were found suitable for inclusion in the NWSR System.

Because a systematic evaluation of eligibility and suitability was completed and documented during the previous BLM and USDA Forest Service planning processes, additional evaluation is only necessary under certain conditions. BLM Manual 6400, *Wild and Scenic Rivers – Policy and Program Direction for the Identification, Evaluation, Planning, and Management (Public)*, states that “additional assessment and study through the land use planning process need only be done if: (1) the documentation no longer exists or is outdated; (2) changed circumstances warrant additional review of eligibility (e.g., a new outstandingly remarkable value) . . . ; (3) there is a change in the suitability factors . . . ; or (4) the authorized officer (Field or District Manager) decides to evaluate the suitability for one or more eligible rivers in the land use planning process. Land use plans should address whether existing evaluations of eligible rivers or suitability studies will be revisited” (BLM 2012). BLM has reviewed current data and policy criteria for additional assessment of eligible rivers and determined that no new circumstances warranted reevaluation of previous determinations on WSR suitability. Because there were no additions to the eligible or suitable segments within BENM and no changed circumstances since the 2008 Monticello RMP, additional evaluation of eligible rivers or an administrative unit-wide suitability study was not completed as part of this land use planning process. Similarly, USDA Forest Service segments previously determined to be not suitable through a prior planning process do not need to be restudied except at the discretion of the Responsible Official if changed circumstances warrant consideration (USDA Forest Service 2015).

Table 3-36. Suitable Wild and Scenic River Segments in the Planning Area

Segment Name	Tentative Classification	ORVs	Length (miles)
Colorado River 2	Scenic	Scenic, fish, recreation, wildlife, cultural, ecological	6.56

Segment Name	Tentative Classification	ORVs	Length (miles)
Colorado River 3	Scenic	Scenic, fish, recreation, wildlife, cultural, ecological	11.64
San Juan River 5	Wild	Scenic, fish, recreation, geological, wildlife, ecological	6.67
Dark Canyon	Wild	Scenic, recreation, wildlife	6.59
Total			31.46

Source: BLM and USDA Forest Service GIS (2022).

Recreation is the primary use occurring in or on lands adjacent to the BLM-administered suitable segments. Increasing visitation and damage from overuse or improper use within the river segments and corridors has the potential to affect identified ORVs and water quality, particularly in the popular Dark Canyon area. As identified by the 2022 BEITC LMP, boats and rafts, especially motorized boats, introduce noise and gas pollution and may introduce nonnative species to the environment. Recreation use levels and the effects of recreation use on ORVs in the San Juan River suitable segment are relatively stable due to a limited permit and allocation system, which was in place prior to WSR eligibility and suitability determinations. The permit system requires adherence to specific stipulations for natural and cultural resources protection.

In addition to increasing recreation use in some areas, trends affecting conditions in suitable WSR segments include climate change, more frequent and higher intensity wildfires, and invasive nonnative plants and noxious weeds. Climate change has resulted in more frequent drought periods, along with higher average annual temperatures and reduced water flow in the Planning Area. Invasive species, including tamarisk, Russian olive, and knapweed, are present and have been increasing in the waterways of the Planning Area, which has changed riparian vegetation composition. These factors have the potential to affect flow, water quality, and ORVs of suitable WSR segments, including scenery, recreation, fish, wildlife, and ecology.

3.4.8.2. ENVIRONMENTAL CONSEQUENCES

3.4.8.2.1. Issue

- How would management of BENM affect suitable WSR segments?

3.4.8.2.2. Impacts Common to All Alternatives

Across all alternatives, WSR segments would remain suitable, and their mileage, ORVs, and tentative classifications would remain as described in the 2008 Monticello RMP. Surface-disturbing activities may occur adjacent to WSRs across all alternatives. Surface disturbance can cause decreased vegetation cover and increased soil compaction, which can reduce water infiltration, leading to an increase in surface water runoff, soil erosion, and sedimentation of adjacent waterways. Surface-disturbing activities can also change the physical characteristics of streams and other surface waterbodies through direct disturbance of stream channels or by increasing runoff from the surrounding watershed. These changes could contribute to fluctuations in infiltration rates, drainage patterns, and stream flows that may have a connection to groundwater.

3.4.8.2.3. Impacts under Alternative A

Under Alternative A, the BLM would continue managing suitable segments as VRM Class I or II, ROW avoidance or exclusion, and closed to OHV use, where applicable. In addition, camping would not be allowed within 200 feet of water sources and discouraged in functional-at risk riparian

areas if camping is shown be a causal factor. This would help preserve each segment's free-flowing condition, identified tentative classification, water quality, and ORVs.

Under Alternative A, motorized boat use is allowed on the two suitable segments classified as scenic and is not explicitly prohibited on the two suitable segments classified as wild. Motorized boat use has the potential to disrupt the primitive nature and solitude within the wild segments; affect the scenic and recreational ORVs through noise and wake; and affect ecological, fisheries, and wildlife ORVs through potential for wake, increased chance of motor oil spills, and disruptions through noise and vibrations.

As described under Section 3.4.8.1, increasing recreational visitation has the potential to affect identified ORVs and water quality of the WSR segments. Under Alternative A, the BLM would continue to prevent impairment within 0.25 mile from the high water mark on each side of the WSR segments, including by managing these areas as VRM Class I or II, ROW avoidance or exclusion, and OHV closed. These allocations limit uses that could affect each segment's free-flowing condition, identified tentative classification, water quality, and ORVs.

Use of BENM lands outside of the 0.25-mile buffer area also would have the potential to affect WSR segments. Lands surrounding the WSR segments are available for grazing, limited to designated routes and trails for OHV use, and open for ROWs. Uses of these lands could affect water quality (such as through sedimentation) and ORVs (such as through the introduction of noise) depending on the type and level of uses and distance from each segment.

3.4.8.2.4. Impacts under Alternative B

Under Alternative B, the BLM would apply slightly more protective management prescriptions to three of the four suitable segments when compared with Alternative A; management of Colorado River Segment 3 would be the same as under Alternative A. No camping would be allowed within 200 feet of springs and water improvements, which would be similar to the protections described for Alternative A.

Compared with Alternative A, Colorado River Segment 2 would change from VRM Class II to VRM Class I and would change from ROW avoidance to ROW exclusion. These actions would aid in the protection and enhancement of the identified ORVs and scenic classification by not allowing further development to occur within the segment corridor. The Dark Canyon segment would be managed as ROW exclusion area, which would aid in the protection and enhancement of the identified ORVs and wild classification by limiting further development within the corridor. San Juan River Segment 5 would include management actions to prohibit motorized boat use within the segment, which would limit potential noise and wake impacts within the segment and continue to protect and enhance the identified ORVs and wild classification.

Under Alternative B, future WSR evaluations would occur in collaboration with the BEC regarding designations, enhancing management of river segments in recognition of the importance of Planning Area rivers to Indigenous peoples.

Effects on WSR segments from management of lands outside of 0.25 mile of the river segments would be similar to those described under Alternative A except that areas would be managed for ROW avoidance, further limiting potential effects on WSR segments compared with Alternative A.

3.4.8.2.5. Impacts under Alternative C

Under Alternative C, management prescriptions and associated impacts would be the same as described under Alternative B, except for San Juan River Segment 5. For this segment, downstream motorized boat travel would be allowed at a low, wakeless speed. Impacts from motorized use would be similar to those described under Alternative A. Restrictions on camping would have the same effects described for Alternative B.

Effects on WSR segments from management of lands outside of 0.25 mile of the river segments would be the same as described for Alternative B.

3.4.8.2.6. Impacts under Alternative D

Under Alternative D, impacts to WSRs from management within the WSR corridors would be the same as described under Alternative C. No camping would be allowed within 0.25 mile (1,320 feet, or 1,120 more feet than under Alternative A) of springs and water improvements, would which extend protections to the extent these overlap with WSR segment corridors.

Effects on WSR segments from management of lands outside of 0.25 mile of the river segments would be the same as described for Alternatives B and C for the San Juan River Segment 5. Management of lands surrounding the other three WSR segments would be more restrictive, including designating areas as ROW exclusion and OHV closed. These allocations would prevent changes to the scenic quality of the area around the segments and preserve fish and wildlife habitat and natural systems and processes by minimizing the potential for OHVs to interact with habitat resources off-trail. This would provide more protection for the free-flowing condition, identified tentative classification, water quality, and ORVs of the Dark Canyon, Colorado River 2, and Colorado River 3 WSR segments than under Alternatives A, B, and C.

3.4.8.2.7. Impacts under Alternative E

Under Alternative E, impacts to WSRs from management within the WSR corridors would be the same as described under Alternative B. No camping would be allowed within 0.25 mile (1,320 feet; 1,120 more feet than under Alternative A) of all surface waters unless in an existing or designated campsite or area, would which protect WSR segments from potential impairments to a greater extent than under Alternative A and more than under all alternatives.

Effects on WSR segments from management of lands outside of 0.25 mile of the river segments would be as described for Alternative D, with additional protections from designation of the proposed Aquifer Protection ACEC over 74% of BENM. Although allocations within this ACEC would be as described for Alternative D, the ACEC would limit surface-disturbing activities over most of BENM and protect groundwater recharge, water quality, and water quantity of the aquifers and aquifers systems more than under Alternative A and the other action alternatives. This would indirectly benefit the free-flowing condition, identified tentative classification, water quality, and ORVs of the WSR segments, particularly Dark Canyon, Colorado River 2, and Colorado River 3, which are adjacent to this ACEC.

3.4.8.2.8. Cumulative Impacts

The impacts of past and present actions in the cumulative impacts analysis area affecting suitable WSRs include grazing, ROW development, recreation, and travel management (see Appendix J). Impacts from such actions could affect the identified ORVs and tentative classification of segments

through surface disturbance and developments that would impact segments' free-flowing character and water quality.

There are no RFFAs (see Appendix J) within or near a WSR segment that would impact the identified ORVs for WSR segments; however, climate change impacts are predicted to affect the identified ORVs through increased stream temperatures, increased severe wildland fire, degradation of vegetation resources, and impacts on scenery resources.

3.4.9. Areas of Critical Environmental Concern and Research Natural Areas

3.4.9.1. AFFECTED ENVIRONMENT

ACECs are areas within the BLM public lands system where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes or to protect life and safety from natural hazards that meet relevance and importance criteria, which are outlined in BLM Manual 1613 – Areas of Critical Environmental Concern. This special management attention involves management measures which would not be necessary and prescribed if the critical and important features were not present. ACECs are identified, evaluated, and designated through BLM's Land Use Planning process, and can be nominated by either the agency or the public.

During the scoping process for BENM, BLM received two public nominations for ACECs: John's Canyon Paleontological ACEC, and the Aquifer Protection ACEC. These two nominated ACECs have been found to meet relevance and importance criteria and are evaluated in greater detail in BLM's ACEC evaluation report (BLM 2023a, BLM 2023b, BLM 2023c). The nominated ACECs are analyzed in detail in Section 3.4.9.2. Additionally, five existing ACECs are located either partially or entirely within the Planning Area (Appendix A, Figure 3-26, Existing Areas of Critical Environmental Concern and Research Natural Areas within the Planning Area) (BLM 2023d). The ACECs in the Planning Area are listed in Table 3-37, along with associated acreage and the relevance and importance criteria for which each ACEC was designated. For a more complete description of the relevance and importance criteria for each ACEC, please see the 2022 AMS.

RNAs are established and maintained for research and education by the USDA Forest Service because the land has one or more of the following characteristics: 1) a typical representation of a common plant or animal association; 2) an unusual plant or animal association; 3) a threatened or endangered plant or animal species; 4) a typical representation of common geological, soil, or water features; or 5) outstanding or unusual geological, soil, or water features (43 CFR 8223). There is one RNA that existed prior to initial Monument designation that has been retained since designation: Cliff Dwellers Pasture RNA (see Appendix A, Figure 3-26, Existing Areas of Critical Environmental Concern and Research Natural Areas within the Planning Area). This area is species rich and includes features such as birch and bluegrass communities, Gambel oak-bigtooth maple woodlands, and slickrock shrub communities (USDA Forest Service 1986).

Table 3-37. Areas of Critical Environmental Concern and Relevant and Important Values in the Planning Area

ACEC Name	Acreage	Relevant and Important Values	Description of Area
San Juan River ACEC	1,555*	Scenic, Cultural, Fish and Wildlife, Natural Systems and Processes, and Geological Features	The San Juan River ACEC is located along the river from west of Bluff, Utah, to Mexican Hat, Utah.

ACEC Name	Acreage	Relevant and Important Values	Description of Area
Indian Creek ACEC	3,936	Scenic	Indian Creek ACEC is located in the northern area of the Monticello FO, east of and adjacent to Canyonlands National Park/Needles District. Indian Creek ACEC buffers the scenic view from the Needles Overlook Interpretive Site across BLM-administered land into Canyonlands National Park. The area includes the lower end of Indian Creek and Rustler Canyon.
Lavender Mesa ACEC	649	Relict Vegetation	Lavender Mesa ACEC covers the top of Lavender Mesa, located in the Indian Creek Corridor.
Shay Canyon ACEC	119	Cultural/Paleontological	Shay Canyon ACEC is located in the southern portion of the Indian Creek Corridor. It includes the areas surrounding the mouth of Shay Canyon itself.
Valley of the Gods ACEC	22,716	Scenic	Valley of the Gods lies north of U.S. Highway 163, extending north to the south cliff line of Cedar Mesa. Valley of the Gods is currently a Special Emphasis Area within the existing Cedar Mesa ACEC.

* Acreage corresponds to the portion of the ACEC within the Monument.

3.4.9.1.1. San Juan River Area of Critical Environmental Concern

The scenery along the San Juan River includes tilted formations as the river crosses Comb Ridge, steep vertical cliffs hundreds of feet high with walls of interbedded sandstone and limestone. Riparian areas with various hues of green border the watercourse and contrast with the red sandstone, presenting a diverse and varied scenic viewing area. Hanging gardens occur in ledges of Navajo Sandstone. The rock writing along the San Juan River is culturally significant, recognized as “type sites” for their specific rock writing motifs. Cultural sites are present along the riverbanks and within the tributaries of the San Juan River. San Juan ACEC contains populations and critical habitat for Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*), two federally listed endangered species. Bonytail (*Gila elegans*) and humpback chub (*Gila cypha*) also occur within the upper Colorado River Basin, but there are no federally listed critical habitats nor any known populations within BENM. State- and BLM-listed sensitive fish species (roundtail chub [*Gila robusta*], flannelmouth sucker [*Catostomus latipinnis*], and bluehead sucker [*Catostomus discobolus*]) also occur within the San Juan River and connected tributaries. Bighorn sheep inhabit the rocky precipices of the lower river. The river corridor is used by migrating southwestern willow flycatcher (*Empidonax traillii extimus*) (an ESA-listed endangered species), and yellow-billed cuckoo (*Coccyzus americanus*) (a threatened species). The San Juan River supports riparian habitat for several other species of wildlife, such as amphibians, neo-tropical birds, and waterfowl.

There are many cultural resources along the San Juan River. Under current management, long-term observations and specific site monitoring suggests cultural resources are in stable condition. The BLM is actively managing several cultural resource sites for visitation, including River House, Big Kachina Panel, Barton Trading Post, and San Juan Hill. All these sites receive visitation from a route that runs along a bench above the San Juan River and visitation from river runners. River House is a large late Ancestral Puebloan village site that receives high numbers of visitation (approximately 9,448 visitors per year in 2021 and 2022 [Haines 2023]) and is one of the most visited archaeological sites in the Monument. There are several cultural sites that are likely receiving intermittent visitation from recreationalists along the river and the road.

Currently, inadvertent impacts to archaeological resources are the biggest risk to these resources along the San Juan River. Large-scale looting of cultural resource sites is rare, and smaller-scale vandalism is similarly uncommon, but it has happened historically. The BLM has stabilized many of the structural sites, including River House. The BLM has also updated etiquette signage at River House to help educate visitors on lessening their impacts to the site. Casual collection of artifacts and historical objects continues to be a problem but is actively addressed by public education efforts. The reasons for this likely include ease of access and simple increases in the number of visitors who can access cultural resource localities. The San Juan River received 12,389 visitors per year, on average, in 2021 and 2022 (Haines 2023).

San Juan River ACEC is heavily invaded by nonnative plants such as Russian olive, tamarisk, knapweed, and camelthorn, impacting riparian and aquatic conditions. Since the signing of the Monticello RMP in 2008, the tamarisk beetle, which was released to control tamarisk growth, has migrated from release sites and made its way through much of the river bottom system of the San Juan and its tributaries. This has resulted in large stands of standing dead and in declining habitat for southwestern willow flycatcher and yellow-bellied cuckoo (Jamison and van Riper 2018). There have been some fuels reduction-type treatments to remove these standing dead tamarisks in San Juan ACEC. These areas only cover a small section of the ACEC, but some native tree species and forbs have re-established successfully.

Regional trend data for 179 native bird species pulled from the Rocky Mountain Bird Observatory show an overall slight decline in bird populations from regional monitoring data collected from 2014 to 2021 (Bird Conservancy of the Rockies 2023); however, this trend varies significantly by species, with some populations stable, some increasing, and some decreasing. The regional trend data for 26 BLM special status bird species also mirrors this decline, although it also can vary significantly by species.

Aquatic habitat complexity (i.e., riffles, runs, pools), including off-channel nursery habitats (e.g., side channels, backwaters, confluence habitats), are important for amphibians and special status fish species but are being lost as a result of woody species' invasion and changes in hydrology related to water development and drought that synergistically result in infilling, aggradation, and further encroachment of invasive plant species. Aquatic connectivity between tributary streams and San Juan River ACEC are also limited by water availability resulting in intermittent, ephemeral, or no connectivity. The San Juan River contains many invasive aquatic species that compete with or predate upon special status fish species, and invasive bullfrogs compete with native amphibians. Feral horses cross the river from the south and graze on native riparian plants, often focusing on active riparian restoration projects.

Although there have been some high spring runoff years in the past decade, overall, since the signing of the Monticello RMP in 2008, the ongoing drought in the Southwest has reduced the yearly base water flows, resulting in dead vegetation in areas that once flooded regularly (USGS 2023). This is detrimental for both T&E bird species and T&E fish species, because there is a reduction in usable habitat for foraging and nesting for birds and a lack of nursery-type habitat for T&E fish species. The San Juan River is a CWA Section 303(d)-listed waterbody impaired in the following categories: iron, lead, benthic macroinvertebrates, *E. coli*, thallium, and cadmium.

3.4.9.1.2. Indian Creek Area of Critical Environmental Concern

Indian Creek ACEC is primarily a scenic ACEC. Due to its remote location to the northeast of the Indian Creek Corridor, near the western boundary of Canyonlands National Park, and the difficulty of accessing it, the Indian Creek ACEC sees very little visitation; however, it is visible from popular

sightseeing overlooks in the Island in the Sky District of Canyonlands National Park and the Canyon Rims Recreation Area. This area is managed as VRM Class I.

Indian Creek ACEC is noted for its incised, meandering canyons that wind through dark red mudstones, forming many rounded spires and hoodoos (boulders atop eroded rock that look like mushrooms). These various formations continue uninterrupted into Canyonlands National Park, which contains some of the most unique landforms in the world. Visitors from around the world come to view this area from overlooks across BLM-administered land and Canyonlands National Park.

3.4.9.1.3. Lavender Mesa Area of Critical Environmental Concern

The vegetative community present on the top of Lavender Mesa is unique because it has developed without the influence of grazing animals and most other mammals. The area is ecologically relevant because it presents an isolated, relict plant community that remains unaltered by human or animal intervention. The vegetative community is important as a baseline for comparative studies of pinyon-juniper woodland and sagebrush-grass communities in other parts of the Colorado Plateau.

Because Lavender Mesa ACEC gets very little to no visitation, the condition of the area remains relatively consistent. Lavender Mesa is an isolated mesa with sheer cliffs preventing access. It has never been grazed by livestock. According to GIS data, the dominant ecological type is an Upland Shallow Loam (Pinyon-Utah Juniper), with vegetation that consists of pinyon and juniper woodlands interspersed with sagebrush communities (USDA-ARS Jornada Experimental Range, USDA NRCS, and New Mexico State University 2023). Soils are a Rizno-Rock outcrop complex, 3 to 15 percent slopes, which are shallow eolian deposits over residuum weathered from sandstone or shale (AGRC 2023).

3.4.9.1.4. Shay Canyon Area of Critical Environmental Concern

Cultural resources in this area represent the interface between two pre-contact cultural groups: Ancestral Puebloan and Fremont. This interface is represented in the unique motifs in the rock writing. The area provides an opportunity for cultural scientific research and paleontology studies. Dinosaur tracks in the bottom of the Shay Canyon wash, when not covered in flood deposits of sand, are a unique visual reminder of the area's distant geological and natural past.

Shay Canyon ACEC is heavily traveled by visitors to the Needles District of Canyonlands National Park, because SR-211 is the only paved route into and out of the district. Visitors typically stop to observe both paleontological and cultural resources at this site. Average daily traffic data from the BLM indicate that visitation to the Shay Canyon Trail, a cultural site, has increased between 2019 and 2022, and this increase is expected to continue.

3.4.9.1.5. Valley of the Gods Area of Critical Environmental Concern

Valley of the Gods provides significant vistas to those who travel the roads surrounding the area. Valley of the Gods is important to regional, national, and international visitors who view and photograph the scenery. Panoramic views can be seen from the highways bordering the area and from a 17-mile graded gravel and clay road. The eroded, wind-sculpted spires and buttes and long rock fins resemble animals or gods with names such as Seven Sailors, Rooster Butte, Setting Hen Butte, Pyramid Peak, Castle Butte, and Bell Butte. The West Fork of Lime Creek, Lime Creek, and the northwestern portion of Lime Ridge are included in this ACEC.

Valley of the Gods is a primarily scenic ACEC that draws international visitation due to its unique and accessible vistas. Recreation Management Information System (RMIS) data indicate that there were 78,428 visitors to Valley of the Gods in 2021 (BLM 2021). This area is managed as VRM Class I and is a ROW exclusion area. Visitors frequently engage in photography and sightseeing in this ACEC, and hot air ballooning has also increased in popularity. Valley of the Gods ACEC is a popular area for dispersed camping; this use is expected to increase and has potential to impact visual quality in the ACEC.

3.4.9.1.6. Cliff Dwellers Pasture Research Natural Area

The Cliff Dwellers Pasture RNA area, approximately 266 acres in size, is species rich. Features include birch and bluegrass communities, Gambel oak-bigtooth maple woodlands, and slickrock shrub communities (USDA Forest Service 1986). Anecdotally, there has been somewhat of an increase in use of this RNA from conversations with landowners in the area (Murdock 2022). User-created trails to cultural resources are becoming more defined and are causing soil movement and erosion in some areas. Such visitation is likely also impacting vegetation and ecological community composition.

Use by native ungulates (deer and elk) is light. The RNA contains a unique native plant community due to the shallow water table. Sedge and horsetail still dominate the open meadows, but site visits in recent years indicate drier conditions (Smith 2022). Cheatgrass is well-established outside the RNA boundary but is currently uncommon within the RNA. There are some patches of an annual fescue, but no invasive or noxious weeds.

A main management concern is violations of ARPA. ARPA violations have previously occurred in the area and remain a potential issue.

3.4.9.2. ENVIRONMENTAL CONSEQUENCES

3.4.9.2.1. Issue

- How would proposed management prescriptions and other management actions affect the relevant or important values of existing and nominated ACECs and the ecological values of RNAs?
- How would relevant and important values be impacted by the decision not to carry forward or not to designate an ACEC?

3.4.9.2.2. Impacts Common to All Alternatives

Areas of Critical Environmental Concern

ACEC management prescriptions only apply to lands contained in each specific ACEC. Management prescriptions are intended to preserve the relevant and important values of each ACEC. The designation and management of ACECs for their relevant and important values would also serve to protect Monument objects.

For this analysis, the impact indicator for ACECs is the overlap of ACECs with management actions and allocations that could either protect or diminish the presence of relevant and important values. Such values include “important historical, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards” (BLM 1988:.01). Depending on the relevant and important values of each ACEC, management actions impacting ACECs may include designations for OHV use, ROWs, VRM classes, or grazing; recreation

management decisions; or other limitations or restrictions on occupancy or use. Table 3-38 below shows the number of acres managed as ACECs under each alternative.

Table 3-38. Acres of Designated Areas of Critical Environmental Concern per Alternative

ACEC	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
San Juan River ACEC (portion within Planning Area)	1,555	0	0	0	1,555
Indian Creek ACEC	3,936	3,936	3,936	3,936	3,936
Lavender Mesa ACEC	649	649	649	649	649
Shay Canyon ACEC	119	0	0	0	119
Valley of the Gods ACEC	22,716	22,716	22,716	22,716	22,716
John's Canyon Paleontological ACEC	0	0	0	1,542	11,465
Aquifer Protection ACEC	0	0	0	1,012,371	85,856
TOTAL	28,975	27,301	27,301	1,041,214*	126,296

* The John's Canyon Paleontological ACEC overlaps the Aquifer Protection ACEC, meaning that a portion of the acres of the John's Canyon Paleontological ACEC also fall within the Aquifer Protection ACEC under Alternative D.

When included in an action alternative, Indian Creek ACEC and Valley of the Gods ACEC would be ROW exclusion areas. Excluding these areas from ROW development would preserve the characteristics of the viewsheds for which these ACECs were nominated by preventing new linear infrastructure or development from taking place across these landscapes.

Research Natural Areas

For RNAs, impact indicators include management actions and allocations that could affect the natural conditions of the RNA, including its unique ecosystems and ecological features, rare or sensitive species and their habitat, or high-quality examples of widespread ecosystems (USDA Forest Service 2023). Specific management actions for Cliff Dwellers Pasture RNA, the sole RNA on BENM, can be found in the 1986 Manti-La Sal LRMP and would remain consistent under all alternatives. The Cliff Dwellers Pasture RNA would be managed as a protective emphasis unit with unmodified internal conditions that can be compared to manipulated conditions outside the RNA. There would be no grazing, timber harvest, recreation facilities, roads, trails (except for research and study purposes), special uses, administrative structures, mineral surface occupancy, or water impoundment structures. Such prohibitions on uses would prevent impacts like erosion, forage consumption, surface disturbance, and the spread of noxious and invasive weeds from changing the internal conditions necessary to the RNA (USDA Forest Service 1986). The USDA Forest Service would collaborate with the BEC to manage the Cliff Dwellers Pasture RNA.

3.4.9.2.3. Impacts under Alternative A

Alternative A would manage 28,975 acres of BENM as ACECs (see Appendix A, Figure 2-6, Alternative A, Areas of Critical Environmental Concern). ACEC designations would serve to protect the relevant and important values of each ACEC and would contribute to the protection of BENM objects.

San Juan River Area of Critical Environmental Concern

Under Alternative A, all motorized and mechanized access would be limited to designated routes. Such management would protect the scenic, cultural, and geological values of this ACEC by preventing cross-country OHV use inadvertently damaging cultural or geological resources or

changing the scenic quality of the ACEC by contributing to erosion or vegetation flattening. Limiting OHV use would also preserve fish and wildlife habitat and natural systems and processes by minimizing the potential for OHVs to interact with habitat resources off-trail. This ACEC would be designated as ROW avoidance, with various areas managed as VRM Classes I, II or III. Such management actions would protect the riparian systems that are relevant objects in this ACEC by limiting development within the ACEC while also preserving its scenic values by minimizing disturbance to the viewshed.

The ACEC would also be available for watershed, range, habitat improvements, and vegetation management, likely benefiting the scenic values by restoring the ACEC to a more natural condition while also improving habitat to serve fish and wildlife values. Private use of wood products would not be allowed except for on-site collection of dead and down wood for campfires limited to collection of driftwood within the floodplain. Such management would benefit standing vegetation and protect habitat areas from wood collectors damaging other vegetation or contributing to erosion.

The ACEC would only be open to livestock use from October 1 to May 31, and riparian systems must meet or exceed PFC under grazing use. Allowing grazing in the ACEC would likely have impacts to fish and wildlife values, because livestock consumption of vegetation and contribution to erosion would impair resources available to species in the ACEC; however, temporal limitations and PFC requirements would allow for forage rest and regeneration, thus serving the fish and wildlife resources by maintaining a certain quality of habitat condition.

Limitations may be placed on recreation to protect wildlife resources if wildlife is being adversely impacted from recreation activity. Fish and wildlife resources would benefit from such recreation management, as habitat quality and disturbance would likely be reduced by limiting recreational opportunities. Similar benefits to fish and wildlife, and to natural processes values, would occur from potential camping closures. Additional protections would be afforded to San Juan River ACEC's cultural values under Alternative A, as no camping would be allowed in cultural sites and climbing aids would not be permitted to access cultural sites. Such management, although limiting access to cultural sites, would preserve these sites far into the future by preventing incidental impacts from visitors interacting with cultural resources.

Indian Creek Area of Critical Environmental Concern

Under Alternative A, the 3,936-acre Indian Creek ACEC would be managed as VRM Class I. Geophysical work, which would include none to minimal surface disturbance, would be allowed if in conformance with VRM Class I management. The ACEC would also be a ROW exclusion area. Such management would preserve the scenic values of this ACEC by ensuring that any change to the landscape, if any should be permitted, would be very limited and would not detract from the landscape's existing character. Because OHVs have the potential to disturb vegetation and cause erosion, potentially impacting the visual qualities of an area, Indian Creek ACEC would be designated as OHV closed. Recreation use could be limited if scenic values are being damaged by recreational activities. The area would remain open for livestock grazing use, which could potentially impact the scenic values of the ACEC, as the presence of livestock could decrease vegetation cover and cause soil disturbance, among other effects. All revegetation would be done with native species naturally occurring in the area, which would conserve habitat for fish and wildlife values and preserve the natural condition of scenic values; however, if native species fail to succeed, scenic values would be impacted by degraded vegetation conditions.

Lavender Mesa Area of Critical Environmental Concern

Lavender Mesa ACEC comprises 649 acres of BENM. Under Alternative A, Lavender Mesa ACEC would be excluded from land treatments or other improvements except as necessary for study of relict plant communities and restoration and reclamation activities. Such management would serve to protect the relict plant community value of this ACEC by minimizing alterations to its constituency and by allowing the vegetation community to persist in its natural condition. Lavender Mesa ACEC would also be completely unavailable to grazing from both livestock and saddle-and-pack animals to retain the intactness of the relict vegetation community from forage consumption or soil erosion from livestock or saddle-and-pack animal use.

Recreation use would be limited as needed to protect relict vegetation, as recreational use may contribute to ambient dust, trampling of vegetation, erosion, and the spread of invasive and noxious weeds that would impact the condition of the relict plant communities. Recreation may also be limited if cultural or scenic values are being damaged by the actions of recreationists, which would reduce indications of disturbance on the landscape as noted in the preceding sentence while also preserving cultural resources for future generations. This ACEC would be closed to all authorized or personal use of wood products, preserving the relict plant community by eliminating the potential for wood gatherers to trample vegetation or spread noxious and invasive weeds. No campfires would be permitted, which would reduce the risk of fire damage to the relict vegetation community.

This ACEC would be closed to OHV use and would be a ROW avoidance area to minimize any potential new disturbance to the relict plant community. OHV use restrictions on Lavender Mesa ACEC would mainly apply to aerial vehicles, as the area is not accessible to non-aerial vehicles. Casual landings of aerial vehicles could be particularly damaging to the relict plant community values on this ACEC due to trampling, soil disturbance and erosion, and the potential spread of noxious and invasive weeds. Helicopter access would be allowed for scientific study and heliportable equipment. The use of helicopters could damage certain areas of the relict vegetation community through compaction and disturbance, but if limited to scientific use only, such impacts would likely be very temporary.

Shay Canyon Area of Critical Environmental Concern

Shay Canyon ACEC would be managed as a ROW avoidance area, which would minimize the potential for future development-related disturbance on the landscape, preserving the cultural and paleontological values of the ACEC. Recreational limitations under Alternative A include closing the ACEC to camping and campfires, limiting hiking to designated trails and motorized/mechanized use to designated routes, and potential limitations on use if cultural or paleontological resources are impacted by recreation. Such management would protect cultural and paleontological values of the ACEC by preventing inadvertent damage to cultural or paleontological resources due to contact with recreationists. Grazing would be restricted to trailing only. Such management would prevent livestock from interacting with and potentially damaging cultural or paleontological values and would also preserve off-trail habitat by preventing livestock from consuming vegetation or contributing to erosion.

Valley of the Gods Area of Critical Environmental Concern

To protect scenic values, Valley of the Gods ACEC would be managed as VRM Class I and only available for vegetation management as consistent with VRM Class I. Such management would preserve the scenic qualities for which the ACEC was designated and would ensure that culturally significant geological features would not be altered in any way. The ACEC would also be closed to

wood product use. Campfires would not be permitted, which would ensure minimum disturbance to the viewshed by eliminating woodsmoke in the area.

OHV use would be limited to designated routes in the ACEC. Such management would limit impacts from OHVs, including disturbance to vegetation, increased erosion, and impacts to the visual and noise quality of an area, and would preserve the cultural values of the ACEC by limiting potential damage caused by OHV use. The ACEC would also be a ROW exclusion area, which would ensure that no new infrastructure on the landscape would alter the scenic values of the ACEC.

John's Canyon Paleontological Area of Critical Environmental Concern (Nominated)

Under Alternative A, the John's Canyon Paleontological ACEC would not be designated. The special management ascribed to the ACEC under Alternatives D and E would not apply. Proposed management actions under other resources, however, would provide similar protections to the relevant and important values identified for the ACEC; therefore, the lack of designation as an ACEC would be unlikely to have meaningful impacts to the resources located there. For example, Under Alternative A, surveys would be required in PFYC Classes 4 and 5 prior to implementing discretionary actions, reducing the potential for impacts to paleontological resources (see Section 3.4.1, Paleontological Resources). Sections 3.4.1, 3.5.1, 3.4.11, 3.4.12, and 3.4.4 of this document, which detail management for paleontological, cultural, fish and wildlife, visual resources, and terrestrial vegetation, provide more information on such management.

Aquifer Protection Area of Critical Environmental Concern (Nominated)

Under Alternative A, the Aquifer Protection ACEC would not be designated. The special management ascribed to the ACEC under Alternatives D and E would not apply; however, proposed management actions under other resources would provide similar protections to the relevant and important values identified for the ACEC. For example, water resources in BENM would be managed to maintain and enhance water quantity and quality, desired mix of vegetation types, and landscape/riparian/watershed function to protect BENM objects. This management would provide protection to Natural Systems/Aquifer Recharge values. As a result, not designating the Aquifer Protection ACEC would be unlikely to have meaningful impacts to the resources located there. Resources listed as relevant and important values for this ACEC under Alternatives D and E would be managed under other pertinent resource management decision under Alternative A, including Sections 3.4.1, 3.5.1, 3.4.12, and 3.4.3.

3.4.9.2.4. Impacts under Alternative B

See Appendix A, Figure 2-7, Alternatives B and C, Areas of Critical Environmental Concern, for special designation areas. Under Alternative B, 27,301 acres would be managed as ACECs, and the John's Canyon Paleontological ACEC and the Aquifer Protection ACEC would not be designated.

San Juan River Area of Critical Environmental Concern

Under Alternative B, San Juan River ACEC would not be designated. The management ascribed to the ACEC under Alternative A would not be carried forward; however, the area would be managed as the San Juan River SRMA, which provides management that is nearly identical to the special management provided under Alternative A. As a result, the decision not to carry the San Juan River ACEC forward would be unlikely to have meaningful impacts to the resources located there, such as River House and San Juan Hill. Resources listed as relevant and important values for this ACEC under Alternative A would be managed under other pertinent resource management decisions under Alternative B, including those in Sections 3.4.12, 3.5.1, 3.4.11, 3.4.4, and 3.4.1.

Indian Creek Area of Critical Environmental Concern

Under Alternative B, management impacts would be the same as under Alternative A with the exception that if needed for restoration purposes, the agencies and the BEC would collaborate to determine desirable nonnative seeds to use to protect BENM objects if probability of success or adapted seed availability is low. Such management would promote swift restoration of degraded areas and likely benefit the scenic qualities of the ACEC by preserving and enhancing its natural character.

Lavender Mesa Area of Critical Environmental Concern

Under Alternative B, management impacts would be similar to those under Alternative A.

Shay Canyon Area of Critical Environmental Concern

Under Alternative B, Shay Canyon ACEC would not be designated. The management ascribed to the ACEC under Alternative A would not be carried forward. Therefore, all of the benefits to the relevant and important values described under Alternative A due to ACEC designation and ACEC-specific management decisions would not apply under Alternative B. Because they would not be protected under an ACEC, the relevant and important values may be degraded over time; however, under all action alternatives, paleontological values would be protected from harmful impacts of grazing, construction, and recreation, and would be provided other protections and survey requirements as well (see Section 3.4.1). Cultural resources, as well as BENM objects, would also be allotted considerable protection under Alternative B (see Section 3.5.1).

Valley of the Gods Area of Critical Environmental Concern

Management impacts under Alternative B would be similar to those under Alternative A, with two exceptions. Instead of all acres of the ACEC being managed as VRM Class I, 57 acres of highway access portals would be managed as VRM Class II, which would somewhat impact the scenic quality of certain areas of the ACEC by applying less stringent visual quality requirements on those 57 acres; however, VRM II portals would allow BLM discretion to develop minimal infrastructure with important resource protection rules and interpretive information that visitors would see upon entering the area. This may have a positive impact in protecting cultural values and scenic values throughout the remainder of the ACEC. Campfires would be permitted in designated sites in agency-provided campfire rings. Campfire smoke and the risks posed by campfires may reduce the scenic quality of the ACEC to a minor degree.

John's Canyon Paleontological Area of Critical Environmental Concern (Nominated)

Under Alternative B, the John's Canyon Paleontological ACEC would not be designated. The special management ascribed to the ACEC under Alternatives D and E would not apply; however, proposed management actions under other resources would provide similar protections to the relevant and important values identified for the ACEC. Therefore the lack of designation as an ACEC would be unlikely to have meaningful impacts to the resources located there. For example, under Alternative B, surveys would be required in PFYC Classes 3, 4 and 5 prior to implementing discretionary actions, reducing the potential for impacts to paleontological resources (see Section 3.4.1). Sections 3.4.1, 3.5.1, 3.4.11, 3.4.12, and 3.4.4 provide more information on other relevant management and protections for relevant and important values.

Aquifer Protection Area of Critical Environmental Concern (Nominated)

Under Alternative B, the Aquifer Protection ACEC would not be designated. The special management ascribed to the ACEC under Alternatives D and E would not apply; however, proposed management actions under other resources would provide similar protections to the relevant and important values identified for the ACEC. For example, water resources in BENM would be managed to maintain and enhance water quantity and quality, desired mix of vegetation types, and landscape/riparian/watershed function to protect BENM objects. This management would provide protection to Natural Systems/Aquifer Recharge values. As a result, not designating the Aquifer Protection ACEC would be unlikely to have meaningful impacts to the resources located there. Resources listed as relevant and important values for this ACEC under Alternatives D and E would be managed under other pertinent resource management decision under Alternative B, including Sections 3.4.1, 3.5.1, 3.4.11, and 3.4.3.

3.4.9.2.5. Impacts under Alternative C

See Appendix A, Figure 2-7, Alternatives B and C, Areas of Critical Environmental Concern, for special designation areas. Under this alternative, there would be 27,301 acres (the same as Alternative B) managed as ACECs. The John's Canyon Paleontological ACEC and the Aquifer Protection ACEC would not be designated.

San Juan River Area of Critical Environmental Concern

Under Alternative C, San Juan River ACEC would not be designated. The management ascribed to the ACEC under Alternative A would not be carried forward; however, the area would be managed as the San Juan River SRMA, which provides management that is nearly identical to the special management provided under Alternative A. As a result, the decision not to carry the San Juan River ACEC forward would be unlikely to have meaningful impacts to the resources located there, such as River House and San Juan Hill. Resources listed as relevant and important values for this ACEC under Alternative A would be managed under other pertinent resource management decisions under Alternative C, including those in Sections 3.4.12, 3.5.1, 3.4.11, 3.4.4, and 3.4.1.

Indian Creek Area of Critical Environmental Concern

Under Alternative C, management impacts would be the same as under Alternative B.

Lavender Mesa Area of Critical Environmental Concern

Under Alternative C, management impacts would be similar to those under Alternative A.

Shay Canyon Area of Critical Environmental Concern

Under Alternative C, Shay Canyon ACEC would not be designated. The management ascribed to the ACEC under Alternative A would not be carried forward. Therefore, all of the benefits to the relevant and important values described under Alternative A due to ACEC designation and ACEC-specific management decisions would not apply under Alternative C. However, under all action alternatives, paleontological values would be protected from harmful impacts of grazing, construction, and recreation, and would be provided other protections and survey requirements as well under Alternative C (see Section 3.4.1). Cultural resources, as BENM objects, would also be allotted considerable protection under Alternative C (see Section 3.5.1).

Valley of the Gods Area of Critical Environmental Concern

Management impacts under Alternative C would be similar to those under Alternative B, except that campfires would no longer be allowed. Such campfire management would reduce haze and preserve the visual quality of the area for visitors.

John's Canyon Paleontological Area of Critical Environmental Concern (Nominated)

Under Alternative C, the John's Canyon Paleontological ACEC would not be designated. The special management ascribed to the ACEC under Alternatives D and E would not apply; however, proposed management actions under other resources would provide similar protections to the relevant and important values identified for the ACEC. Therefore, the lack of designation as an ACEC would be unlikely to have meaningful impacts to the resources located there. For example, under Alternative C, surveys would be required in PFYC Classes 3, 4 and 5 prior to implementing discretionary actions, reducing the potential for impacts to paleontological resources (see Section 3.4.1). Resources listed as relevant and important values for this ACEC under Alternatives D and E would be managed under other pertinent resource management decisions under Alternative C. Sections 3.4.1, 3.5.1, 3.4.11, 3.4.12, and 3.4.4 of this document provide more information on such management.

Aquifer Protection Area of Critical Environmental Concern (Nominated)

Under Alternative C, the Aquifer Protection ACEC would not be designated. The special management ascribed to the ACEC under Alternatives D and E would not apply; however, proposed management actions under other resources would provide similar protections to the relevant and important values identified for the ACEC. For example, water resources in BENM would be managed to maintain and enhance water quantity and quality, desired mix of vegetation types, and landscape/riparian/watershed function to protect BENM objects. This management would provide protection to Natural Systems/Aquifer Recharge values. As a result, not designating the Aquifer Protection ACEC would be unlikely to have meaningful impacts to the resources located there. Resources listed as relevant and important values for this ACEC under Alternatives D and E would be managed under other pertinent resource management decision under Alternative C, including Sections 3.4.1, 3.5.1, 3.4.12, 3.4.11, 3.4.3 and 3.4.4.

3.4.9.2.6. Impacts under Alternative D

See Appendix A, Figure 2-8, Alternative D, Areas of Critical Environmental Concern, for ACECs. Under Alternative D there would be 1,041,214 acres managed as ACECs. This would serve to protect the relevant and important values of each ACEC and would contribute to the protection of BENM objects throughout the majority of the Monument.

San Juan River Area of Critical Environmental Concern

Under Alternative D, San Juan River ACEC would not be designated. The management ascribed to the ACEC under Alternative A would not be carried forward; however, the area would be managed as the San Juan River MA, with resources identified under Alternative A as relevant and important values managed for the protection of BENM objects under other pertinent resource management decisions under Alternative D, including those in Sections 3.4.12, 3.5.1, 3.4.11, 3.4.4, and 3.4.1.

Indian Creek Area of Critical Environmental Concern

Under Alternative D, management impacts would be the same as under Alternative B.

Lavender Mesa Area of Critical Environmental Concern

Under Alternative D, management impacts would be similar to those under Alternative A.

Shay Canyon Area of Critical Environmental Concern

Under Alternative D, Shay Canyon ACEC would not be designated. The management ascribed to the ACEC under Alternative A would not be carried forward. Therefore, all of the benefits to the relevant and important values described under Alternative A due to ACEC designation and ACEC-specific management decisions would not apply under Alternative D. However, under all action alternatives, paleontological values would be protected from harmful impacts of grazing, construction, and recreation, and would be provided other protections and survey requirements under Alternative D as well (see Section 3.4.1). Cultural resources, such as BENM objects, would also be allotted considerable protection under Alternative D (see Section 3.5.1).

Valley of the Gods Area of Critical Environmental Concern

Management impacts under Alternative D would be similar to those under Alternative B, except that campfires would no longer be allowed. Such campfire management would reduce haze and preserve the visual quality of the area for visitors.

John's Canyon Paleontological Area of Critical Environmental Concern (Nominated)

The proposed John's Canyon Paleontological ACEC is in the southwestern portion of BENM within the Cedar Mesa SRMA and Grand Gulch WSA, just north of the San Juan River. Table 3-39 below outlines the relevant and important values for this ACEC.

Table 3-39. John's Canyon Paleontological Area of Critical Environmental Concern Overview

ACEC Name	Acres	Relevant and Important Values
John's Canyon Paleontological ACEC	1,542	Paleontological, Cultural

Source: BLM (2023a).

Under Alternative D, all motorized and mechanized access would be limited to designated routes. Such management would protect the cultural and paleontological values of this ACEC by preventing cross-country OHV use inadvertently damaging cultural or paleontological resources and contributing to erosion or vegetation flattening, damaging the natural character of the ACEC.

Recreation could be limited under this alternative if cultural resources are being impacted. Such management would preserve the cultural and paleontological values of this ACEC by preserving these sites far into the future by preventing incidental impacts from visitors interacting with cultural resources.

John's Canyon Paleontological ACEC would be a ROW exclusion area, which would ensure that no new infrastructure on the landscape would alter the visual quality of the ACEC. Such management would also preserve the ACEC's character, benefitting the cultural value of the ACEC, as the site may host Indigenous practices and is within the culturally significant Cedar Mesa plateau.

Any surface-disturbing activities would require preemptive paleontological surveys and would be limited to those actions required to protect BENM objects. This would protect the paleontological values of John's Canyon Paleontological ACEC by preventing disturbance to significant paleontological resources, if discovered.

Aquifer Protection Area of Critical Environmental Concern (Nominated)

The proposed Aquifer Protection ACEC covers almost all BLM-administered lands within the boundaries of BENM, with the exception of other existing ACECs and small areas at the south end of BENM that do not fall within the extent of major aquifers. The Aquifer Protection ACEC incorporates all aquifers and aquifer systems serving as primary drinking water sources for communities near BENM, including White Mesa, Mexican Hat, Bluff, Blanding, and Monticello and the public drinking water systems at NBNM, Kane Gulch Ranger Station, Sand Island Ranger Station and Canyonlands National Park – Needles District. Table 3-40 below outlines relevant and important values for the Aquifer Protection ACEC.

Table 3-40. Aquifer Protection Area of Critical Environmental Concern Overview

ACEC Name	Acres	Relevant and Important Values
Aquifer Protection ACEC	1,012,371	Cultural, Scenic, Paleontological, Natural Systems/Natural Processes

Source: BLM (2023b).

Under Alternative D, all motorized and mechanized access would be limited to designated routes where not designated as OHV closed through other management decisions. Such management would protect the cultural value of this ACEC by preventing cross-country OHV use inadvertently damaging cultural resources or changing the natural quality of the ACEC by contributing to erosion or vegetation flattening.

All discretionary uses would be managed to avoid adverse impacts to vegetation and to groundwater-dependent ecosystems. Habitat quality would likely increase and disturbance due to vegetation trampling and soil erosion would likely be reduced by such management of discretionary uses, thereby preserving the natural character of the ACEC while benefitting natural groundwater filtration processes. Additionally, such management could reduce disturbance to cultural sites, preserving these sites by preventing incidental impacts from discretionary uses. The protections limiting discretionary uses and surface disturbance could also decrease potential disturbance of or damage to paleontological values, thereby preserving them.

Additionally, any surface-disturbing activities would be limited to those actions required to protect BENM objects. Such management would minimize the potential for any future disturbance, protecting cultural resources from ground disturbance and damage, and preserving scenic values by maintaining the natural characteristics and cultural significance of the area. This ACEC would also provide protection of groundwater recharge, water quality, and water quantity of the aquifers and aquifer systems that serve as the primary drinking water sources for adjacent communities, including Monticello, Blanding, White Mesa, Bluff, and Mexican Hat. Protection of the aquifer characteristics is based on the limitation of surface-disturbing activities, discretionary uses, and OHV use, and on the prohibition of new storage tanks for hazardous materials in the ACEC to remove possible sources of aquifer contamination. By limiting surface disturbance, infiltration areas are protected because decreased vegetation cover and soil compaction can reduce water infiltration, leading to an increase in surface water runoff, soil erosion, and sedimentation of adjacent waterways. Additionally, surface-disturbing activities can change the physical characteristics of streams and other surface waterbodies through direct disturbance of stream channels or by increasing runoff from the surrounding watershed. These changes could contribute to fluctuations in infiltration rates, drainage patterns, and stream flows that may have a connection to groundwater. To further protect groundwater resources, a hydrologic study would be required for all proposed groundwater withdrawals.

3.4.9.2.7. Impacts under Alternative E

As noted in Table 3-38 above, Alternative E would manage 126,296 acres of BENM as ACECs (see Appendix A, Figure 2-9, Alternative E, Areas of Critical Environmental Concern). This would serve to protect the relevant and important values of each ACEC.

San Juan River Area of Critical Environmental Concern

San Juan River ACEC management impacts under Alternative E would be the same as under Alternative A, with the exception that the ACEC would be classified as ROW exclusion due to its scenic relevance and importance. Excluding this area from ROW development would preserve the characteristics of the viewsheds for which this ACECs was nominated by preventing new linear infrastructure or development from taking place across this landscape.

Indian Creek Area of Critical Environmental Concern

Under Alternative E, management impacts would be the same as under Alternative B.

Lavender Mesa Area of Critical Environmental Concern

Under Alternative E, management impacts would be similar to those under Alternative A.

Shay Canyon Area of Critical Environmental Concern

Management impacts for Shay Canyon ACEC under Alternative E would be the same as under Alternative A.

Valley of the Gods Area of Critical Environmental Concern

Management impacts under Alternative E would be similar to those under Alternative B, except that campfires would no longer be allowed. Such campfire management would reduce haze and preserve the visual quality of the area for visitors.

John's Canyon Paleontological Area of Critical Environmental Concern (Nominated)

The proposed John's Canyon Paleontological ACEC is in the southwestern portion of BENM within the Cedar Mesa SRMA and Grand Gulch WSA, just north of the San Juan River. Table 3-41 below outlines the relevant and important values for this ACEC.

Table 3-41. John's Canyon Paleontological Area of Critical Environmental Concern Overview

ACEC Name	Acres	Relevant and Important Values
John's Canyon Paleontological ACEC	11,465	Paleontological, Cultural, Scenic, Fish and Wildlife, T&E Species

Source: BLM (2023a).

Under Alternative E, management of the John's Canyon Paleontological ACEC would be the same as under Alternative D, with the additional management outlined below.

In addition to limiting recreation due to impacts on cultural values, recreation could also be limited under this alternative if scenic resources or vegetation communities are impacted. Such management would preserve the cultural, scenic, fish and wildlife, and special status species values of this ACEC. Fish and wildlife values and vegetation values would directly benefit from such

recreation management, as habitat quality would likely increase and disturbance due to vegetation trampling and soil erosion would likely be reduced by limiting recreational opportunities. Reducing recreation-related disturbance in this manner and preserving wildlife and vegetation resources would also preserve the natural character of the ACEC, benefiting its scenic qualities.

Vegetation management would also require surveys of T&E species prior to implementation under Alternative E, which would preserve special status species and their habitat by ensuring that no vegetation management actions would disturb or disrupt established special status species in this ACEC.

John’s Canyon Paleontological ACEC would also be managed as VRM Class I, which would ensure that no new infrastructure on the landscape would alter the visual quality of the ACEC. Such management would also preserve the ACEC’s character, benefitting the cultural value of the ACEC, as the site may host Indigenous practices and is within the culturally significant Cedar Mesa plateau.

Aquifer Protection Area of Critical Environmental Concern (Nominated)

Under Alternative E, the proposed Aquifer Protection ACEC covers 85,856 acres of the BLM-administered lands in BENM, which is less than the Aquifer Protection ACEC under Alternative D. The Aquifer Protection ACEC incorporates portions of the aquifers and aquifer systems serving as primary drinking water sources for several communities near BENM, including White Mesa, Bluff, and Blanding, and the public drinking water systems at NBNM and Sand Island Ranger Station. This area includes important recharge areas on BLM-administered lands related to these public drinking water systems, the proposed sole source aquifer area for the community of White Mesa, and the GPZ surrounding NBNM as designated by the State of Utah. Table 3-42 below outlines relevant and important values for the Aquifer Protection ACEC.

Table 3-42. Aquifer Protection Area of Critical Environmental Concern Overview

ACEC Name	Acres	Relevant and Important Values
Aquifer Protection ACEC	85,856	Cultural, Scenic, Paleontological, Natural Systems/Natural Processes

Source: BLM (2023b).

Under Alternative E, management of the Aquifer Protection ACEC would be the same as under Alternative D, and would therefore have the same management implications as Alternative D; however, the area covered by the Aquifer Protection ACEC is larger under Alternative D than under Alternative E, meaning that Aquifer Protection ACEC management would apply to a smaller area under Alternative E. The only additional management under Alternative E for this ACEC would be managing it as VRM Class I in Outback and Remote Zones, and VRM Class II in Front Country and Passage Zones. This management would largely preclude viewshed-disrupting development in these areas of the ACEC, preserving its scenic relevant and important value.

3.4.9.2.8. Cumulative Impacts

The analysis area for cumulative effects to ACECs and RNAs is the Planning Area for BENM. Grazing, recreation, and travel management actions, among others, are past and present actions contributing to cumulative effects. Some RFFAs could lead to surface disturbance, degradation of scenic qualities, and deterioration of vegetation health or the spread of noxious and invasive weeds—all of which may impact the relevant and important values of an ACEC, or the ecological intactness of an RNA. Surface-disturbing activities can also impact cultural or paleontological

resources and may impact the potential for scientific research in these areas. Some of these values are slow to recover or are not possible to recover at all (e.g., paleontological, cultural); however, because many relevant and important values are also BENM objects, these values would be protected under the designation of the Monument.

The Red House Cliffs Water Wells, Beef Basin and Dark Canyon Plateau Range Improvements, Flats Water Wells, Cave Canyon Water Wells, East League Livestock Water Wells, Slickhorn Allotment Water Wells, and Indian Creek Range Improvements may impact the natural systems resources of the proposed Aquifer Protection ACEC by decreasing groundwater resources and decreasing flows at springs and spring-fed streams. Impacts from the proposed water wells could be detrimental to the aquifers and aquifer systems that serve as primary drinking water sources for adjacent communities. The Red Canyon water wells project outside of the Planning Area has the potential to have similar impacts.

The Mancos Mesa ROW access would create additional disturbance on the Aquifer Protection ACEC, impacting fish and wildlife and vegetation values. The House on Fire Trailhead improvements would cause slight new disturbance to the Aquifer Protection ACEC, as would the Bluff River Trail and the San Juan Bridge Emergency Repair by UDOT and the Cottonwood Wash Bridge Replacement EA. These disturbances would cause short-term impacts, but over the long term (after 2–3 years) the impacts would be positive in nature, providing protection of the aquifers and aquifer systems that serve as primary sources of drinking water for adjacent communities as well as providing water to natural systems within the Planning Area.

Vegetation treatments like those at Tables of the Sun and White Canyon could benefit both fish and wildlife and vegetation values of the proposed Aquifer Protection ACEC by improving both vegetation condition and habitat. Likewise, the Shay Mesa Retreatment/Maintenance EA would cause no new disturbance and would only serve to benefit both fish and wildlife and vegetation values of the Aquifer Protection ACEC. The Indian Creek Water BDA and Erosion Mitigation project may benefit the scenic values of Indian Creek ACEC by increasing riparian vegetation and decreasing erosion on the landscape, likely improving the visual quality of the area. See Appendix J for a list of RFFAs.

3.4.10. Wilderness Study Areas

This section discusses BLM-administered WSAs within the Planning Area. In addition to WSAs, BLM-administered ISAs in the Planning Area are natural areas that existed at the passage of FLPMA and were identified under FLPMA for accelerated wilderness review; they are administered by the BLM the same as WSAs. For discussion and analysis purposes, the acronym WSA will be used comprehensively to include ISAs throughout the remainder of the section. Management direction for the USDA Forest Service–managed Dark Canyon Wilderness and recommended wilderness areas is contained in the Manti-La Sal LRMP. Therefore, these areas are not analyzed in detail as part of this RMP/EIS.

With the passage of FLPMA, Congress directed the BLM to inventory, study, and recommend which public lands under its administration should be designated as wilderness. The Utah Wilderness Act of 1984 designated 706,736 acres of wilderness statewide, including the 46,333-acre Dark Canyon Wilderness on NFS lands in the Planning Area. The *Utah Statewide Wilderness Study Report*, published in October 1991 (BLM 1991), reported the results and made recommendations to Congress about which BLM-administered lands should be designated as wilderness in Utah. The final recommendations for wilderness designation were forwarded to Congress on June 22, 1992. Congress has not yet acted on the recommendations within the Planning Area.

Section 603(c) of FLPMA provides direction to the BLM on the management of WSAs. It states that, with some exceptions, “the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness.” This language is referred to as the “non-impairment” mandate.

WSAs are non-discretionary units administered by the BLM under existing law, regulations, and policy to protect wilderness characteristics from impairment until such time as Congress either designates these units under the authority of the Wilderness Act or releases them from further consideration. For this reason, changes to these special area designations are beyond the scope and authority of this RMP/EIS.

3.4.10.1. AFFECTED ENVIRONMENT

Eleven WSAs are within the Planning Area. These 11 WSAs account for approximately 377,118 acres of the Planning Area (Table 3-43). A description of wilderness characteristics and other resource values and uses in each WSA can be found in the *Utah Statewide Wilderness Study Report* (BLM 1991). Table 3-43 provides a breakdown of each WSA and their acreages within BENM alongside the acreages originally identified for each WSA. All WSAs identified under FLPMA Section 603 are non-discretionary units of the NLCS and managed under the provisions of BLM Manual 6330 (BLM 2012).

An area consisting of 2,261 acres in the vicinity of the Butler Wash WSA was studied as a boundary variation during the wilderness review mandated by Congress in FLPMA 43 Section 603(a) and (b) (Butler Wash Administratively Endorsed Area). The 2008 Monticello RMP treated these acres as an Administratively Endorsed Area that was not managed under an interim management plan. Because this area was included as part of the Butler Wash WSA in the *Utah Statewide Wilderness Study Report* (BLM 1991), it has been determined that these acres are part of the Butler Wash WSA and managed under current WSA policy.

Table 3-43. Wilderness Study Areas within Bears Ears National Monument

WSA Name	Total (acres)	1991 <i>Utah Statewide Wilderness Study Report</i> (acres)*
Bridger Jack Mesa WSA	5,233	5,290
Butler Wash WSA	24,312	24,185
Cheese Box Canyon WSA	14,871	15,410
Fish Creek Canyon WSA	46,097	46,440
Indian Creek WSA	6,469	6,870
Mancos Mesa WSA	50,846	51,440
Mule Canyon WSA	6,014	5,990
Road Canyon WSA	52,344	52,420
South Needles WSA	159	160
Dark Canyon WSA	67,840	68,030
Grand Gulch WSA	105,194	105,520
Total	377,118	381,755

Source: BLM and USDA Forest Service GIS (2022).

Note: Numbers have been rounded, so total may not match.

* BLM (1991).

Across the state, Utah Trust Lands Administration manages lands to raise funds for Utah public schools. Some of these parcels are within the boundary of what became BENM. There are 17,669 acres of Utah Trust Lands within BENM WSA boundaries. These parcels are considered inholdings because they are completely surrounded by WSA lands.

Visitation to BENM has been steadily increasing over the last several years. With visitation numbers increasing, threats to WSAs include improper OHV usage, illegal incursions into WSAs, and degradation of natural and cultural resources. Specifically, within the Grand Gulch WSA and the Fish Creek, Mule Canyon, and Road Canyon WSAs, increased visitation is causing impacts to archaeological resources that have been identified as one of the supplemental wilderness values of the area. These threats mirror concerns of Indigenous people presented in the 2022 BEITC LMP.

Some WSAs within BENM are also experiencing resource impacts associated with illegal incursions for wood cutting. Although wood cutting is an authorized activity under the 2008 Monticello RMP, these authorizations do not allow wood cutting in WSAs. This type of activity typically creates transportation linear disturbances, which can create impacts to cultural and archaeological resources, fragile soils, fire risk, and other wilderness characteristics. Within the Planning Area, the Grand Gulch WSA is experiencing the highest levels of disturbances associated with wood cutting (Meyer 2020).

3.4.10.2. ENVIRONMENTAL CONSEQUENCES

3.4.10.2.1. Issue

- How would BENM management affect the values and wilderness characteristics associated with WSAs?

3.4.10.2.2. Impacts Common to All Alternatives

Under all alternatives, the 11 existing WSAs would continue to be managed consistent with Section 603(c) of FLPMA, BLM Manual 6330, and the non-impairment mandate. All WSAs would continue to be managed as VRM Class I, closed to OHV use, and ROW exclusion areas. As a result, the wilderness characteristics that support WSA classification would continue to be protected to maintain suitability for potential wilderness designation. Management intended to protect Monument objects would help the BLM meet the non-impairment standard and therefore help protect wilderness suitability. In addition, management actions within BENM WSAs to protect wilderness characteristics would largely serve to protect identified Monument objects under all alternatives because they often include complementary management objectives. The protections subject to WSA designation would preserve wilderness characteristics also important to Indigenous peoples who share cultural connections to the sacred and cultural landscapes of BENM (see Appendix L).

In the WSAs, effects on wilderness characteristics commonly come from recreation; vegetation treatments; wildfires; and the installation, maintenance, and use of range/wildlife improvements allowed under BLM policy. Any surface disturbing activities in WSAs, such as vegetation treatments, would only be allowed if considered necessary to maintain or enhance wilderness characteristics.

Grazing activities and related range improvements in WSAs may continue in the same manner and degree as on the date the FLPMA was enacted, even though the activity may impair wilderness suitability (BLM 2012). Structures such as fences, stock trails, springs, and stock ponds in WSAs would continue to be maintained, even though continued maintenance and presence of structures can affect the area's apparent naturalness.

Fire is managed in WSAs to allow the frequency and intensity of the natural fire regime to play its inherent role in the ecosystem. This means both allowing fire where ecosystems evolved in the presence of fire and preventing unnatural spread of fire in ecosystems that evolved without broadscale fires. Wildfire suppression would prevent catastrophic destruction of vegetation and would preserve wilderness characteristics in these areas over the long term. Fire suppression restrictions, such as on the use of heavy equipment or retardant, could limit the effectiveness of suppression actions; however, resource damage from suppression equipment would be reduced. MIST would limit unanticipated effects on wilderness characteristics during fire suppression.

3.4.10.2.3. Impacts under Alternative A

Under Alternative A, the 11 existing WSAs would continue to be managed as defined by the 2008 Monticello RMP and the 2020 ROD/MMPs. If WSAs within BENM are released by Congress, the BLM would conduct a land use plan and RMP amendment with accompanying NEPA analysis to determine how those lands would be managed.

Under Alternative A, the Bridger Jack Mesa WSA would continue to be managed as part of the Indian Creek SRMA. The one 0.08-mile route into the Fish Creek Canyon WSA would continue to be conditionally opened to motorized recreation use to access the Moon House site. Four routes would remain available for administrative use. ISRPs would continue to limit visitation to the Moon House site to 20 total visitors daily, with group sizes no larger than 12. Motorized use within the WSA would continue to have impacts to wilderness characteristics, including naturalness, opportunity for solitude, and primitive recreation, due to the presence of vehicle noise; however, because the publicly available route would continue to be limited in distance—approximately 422 feet—the effects of noise disturbance would be minimal.

Effects on WSAs from increasing visitation would continue as described under Affected Environment, including effects on archaeological resources identified as one of the supplemental wilderness values within the Grand Gulch WSA and the Fish Creek, Mule Canyon, and Road Canyon WSAs.

3.4.10.2.4. Impacts under Alternative B

Under Alternative B, impacts on WSAs would be the same as those described in Section 3.4.10.2.2, and similar to what was described under Alternative A. The process for re-evaluating released WSAs would be the same as under Alternative A; however, compared with Alternative A, additional steps would be taken to ensure the protection of BENM objects if WSAs were to be released from wilderness consideration. Under Alternative B, if there is a release of any WSA within BENM, whether in whole or in part, management would continue to preserve wilderness characteristics until re-inventories of wilderness attributes occurs. If the lands in question are determined to have wilderness characteristics, in collaboration with the BEC, they would be managed to protect those characteristics. As a result, management under Alternative B would protect the wilderness characteristics, including those that also have important significance for Tribes, compared with Alternative A.

The Fish Creek WSA would be managed similar to what was described under Alternative A, with the exception that the route to Moon House would no longer be conditionally available for motorized use. Impacts described under Alternative A would no longer occur under Alternative B related to this use.

3.4.10.2.5. Impacts under Alternative C

Under Alternative C, impacts to WSAs would be the same as those described under Alternative B and therefore similarly different from Alternative A.

3.4.10.2.6. Impacts under Alternative D

Under Alternative D, impacts to WSAs would be similar to those described under Alternative B and therefore similarly different from Alternative A. Under Alternative D, however, all recreational shooting would be prohibited in WSAs, which would prevent the degradation of outstanding solitude from shooting noise; degradation of naturalness from trash and bullet damage to rocks, soil, and vegetation; and damage to Monument objects from bullet impacts and noise disturbances near sensitive cultural sites. The use of firearms for the lawful pursuit of game would still be permissible.

3.4.10.2.7. Impacts under Alternative E

Under Alternative E, impacts to WSAs would be similar to those described under Alternative D and therefore similarly different from Alternative A; however, under this alternative, the process for managing released WSAs would be the same as described under Alternative A.

3.4.10.2.8. Cumulative Impacts

Past and present actions in the cumulative impacts analysis area affecting WSA units and their associated wilderness characteristics include grazing, recreation, travel management, and vegetation treatments as these activities can impact the naturalness and outstanding opportunities for solitude or primitive and unconfined recreation that make these WSAs suitable for designation as wilderness. Management actions within BENM to protect identified designated objects would largely serve to protect the wilderness characteristics of these WSA units under all alternatives.

RFFAs may result in cumulative impacts on WSAs. The House on Fire Trailhead could indirectly cause more visitation to Mule Creek Canyon, which may result in the reduction of solitude characteristics. However, better signage would guide visitors to stay on trails and reduce the use of social trails, which would increase overall naturalness. The construction of three water wells and a fence to prohibit cattle from accessing water sources in Kane Gulch would result in the protection of supplemental cultural values and improvement of primitive and unconfined recreation in Grand Gulch WSA. The reconstruction of the Salt Creek Trail would enhance opportunities for primitive and unconfined recreation in the Butler Wash WSA. As an allocated permit, there would be no anticipated loss of outstanding opportunities for solitude.

The temporary construction of several miles of roads across the Mancos Mesa WSA to access Utah Trust Lands may result in adverse impacts to naturalness and visual quality during implementation. The Dark Canyon Airstrip is located on the boundary of the Dark Canyon WSA. Reconstruction and use of the airstrip would cause impacts to solitude, though after construction regular use of the airstrip is anticipated to be low. Additionally, the direction of takeoff and landing face away from the canyon, which would result in limited disturbance.

The drilling of three water wells for livestock in the Slickhorn Allotment are located adjacent to Grand Gulch WSA, along cherry stems or boundary roads, and are anticipated to have minor, localized impacts on naturalness due to good vegetative screening in those areas. The drilling of water wells near the Red House Cliffs for the Lake Canyon Allotment includes the use of a grandfathered, but closed, route through the Grand Gulch WSA to access one of the wells. No

impacts to wilderness characteristics are anticipated. Similarly, the proposed replacement of three guzzlers would occur adjacent to the Cheesebox Canyon WSA, but no impacts to wilderness characteristics are anticipated.

3.4.11. Wildlife and Fisheries

The analysis area for fisheries and wildlife varies by species. Wildlife species within the Planning Area are grouped in this section according to the two habitat types they inhabit: aquatic species (e.g., fish, amphibians, macroinvertebrates) and terrestrial species (e.g., mammals, reptiles, migratory and resident birds, game species), in response to management actions that address terrestrial or aquatic habitat. Many terrestrial wildlife species are highly dependent on the water availability and productivity associated with aquatic habitat, however, and aquatic ecosystems depend on the terrestrial environment for nutrient input and are directly affected by upland ecosystem health through runoff and erosion.

Special status species are those listed as threatened, endangered, or candidate species under the ESA; species identified as sensitive by the BLM and/or USDA Forest Service; Manti-La Sal National Forest SCC; and UDWR Species of Greatest Conservation Need (SGCN). Except for species listed under the ESA, BGEPA, and MBTA, UDWR manages wildlife populations in the Planning Area, including establishing management goals and objectives, whereas the BLM and USDA Forest Service manage wildlife and fisheries habitat in a condition that will support desired levels of species. Both the BLM and USDA Forest Service work closely with UDWR to manage habitat for fish and wildlife to achieve and maintain suitable habitat for desired population levels and distribution within the Planning Area.

In general, BLM and USDA Forest Service management objectives for special status species are the conservation and/or recovery of ESA-listed species and the ecosystems on which they depend so that ESA protections for those species are no longer needed while also initiating proactive measures that reduce or eliminate threats to sensitive species to minimize the likelihood of a need for listing those species under the ESA. Species identified as sensitive by the BLM and/or USDA Forest Service are considered in management actions by those agencies, and management decisions are made with an objective to avoid impacts that may increase the likelihood that those species would eventually warrant listing under the ESA. The BLM and USDA Forest Service work cooperatively with UDWR through habitat management and restoration to maintain and re-establish populations of species whose current or historical range occurs within the Planning Area.

Culturally important species, once identified by the participating tribes, would also be considered special status species and may include some species already identified as special status; however, at the time of development of this RMP/EIS, no such lists have been developed. Such species would be identified during implementation of the RMP and managed according to tribal management guidelines. Additionally, “rare and important plant and animal species” have been identified as specific objects of historic and scientific interest associated with the Planning Area (Proclamation 9558).

The analysis areas for special status wildlife and fisheries populations would comprise of the extent of their known populations and their potential range of habitat in the Planning Area. For evaluation of special status aquatic species where habitats have not been identified or delineated, the analysis area consists of the extent of the HUC 10 watersheds present within BENM (Appendix A, Figure 3-27, Hydrologic unit code 10 watersheds within the Planning Area). The HUC 10 watershed level was chosen because several significant watersheds that provide habitat for aquatic species overlap the Planning Area, including Lockhart Canyon-Colorado River, Cataract Canyon-Colorado

River, Cottonwood Wash, Comb Wash-San Juan River, and Indian Creek. Additionally, aquatic species populations generally tend to be confined geographically by watersheds.

The primary quantitative indicators used to evaluate the existing condition and potential impacts to wildlife and fisheries in this RMP/EIS are certain types of agency-mapped habitat acreage for big game species and the acreage of land use or management actions occurring within those habitat areas. The primary quantitative indicators used for the analysis of potential effects to special status species are the acres of designated critical habitat for ESA-listed species and the acreage of land use or management actions overlapping the critical habitat. Other impacts to all wildlife and fisheries, including special status species, are considered quantitatively with respect to the acres affected by the acreage of land use or management actions under each alternative, and are otherwise assessed qualitatively.

Federal agencies are required to consult with the USFWS if their actions may affect ESA-listed species or their critical habitat. The BLM and USDA Forest Service have initiated consultation with the USFWS for this RMP/EIS, and formal consultation will be initiated once a final agency proposed action has been identified. During the consultation process, measures will be identified to avoid, minimize, or mitigate impacts to listed species and critical habitat. In this analysis, those measures are unavailable for consideration in the analysis. Use of acres of critical habitat in this analysis is assumed to approximately correlate with the relative impact of each alternative on those species; however, prior to approval of any activities within critical habitat, measures established during ESA Section 7 consultation would reduce the actual impacts to those species and their habitat.

3.4.11.1. AFFECTED ENVIRONMENT

The Planning Area is located within the Colorado Plateau Province (NPS 2018) and supports complex and rare ecosystems with an equally varied assemblage of fish and wildlife that have developed unique adaptations to their environments. Wildlife within the Planning Area broadly includes game species, upland game birds, neotropical migratory birds, waterfowl, raptors, reptiles, amphibians, fish, macroinvertebrates, and other small non-game animal species.

The Planning Area provides habitat for at least 15 species of bats, including the big free-tailed bat (*Nyctinomops macrotis*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), and silver-haired bat (*Lasionycteris noctivagans*), as well as numerous small mammal species such as beavers (*Castor* spp.), porcupine (*Erethizon dorsatum*), desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), prairie dog (*Cynomys* spp.), Botta's pocket gopher (*Thomomys bottae*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), Colorado chipmunk (*Tamias quadrivittatus*), canyon mouse (*Peromyscus crinitus*), deer mouse (*Peromyscus maniculatus*), pinyon mouse (*Peromyscus truei*), desert woodrat (*Neotoma lepida*), Abert's tassel-eared squirrels (*Sciurus aberti*), Merriam's shrew (*Sorex merriami*), and dwarf shrews (*Sorex nanus*). Larger carnivores include badgers (*Taxidea taxus*), coyotes (*Canis latrans*), striped skunk (*Mephitis mephitis*), ringtail cats (*Bassariscus astutus*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and the occasional mountain lion (*Puma concolor*) and black bear (*Ursus americanus*).

Avian species known to occupy the Planning Area are provided in Section 6.10 of the 2022 AMS, but common species typical of the region include Merriam's turkey (*Meleagris gallopavo*), Williamson's sapsucker (*Sphyrapicus thyroideus*), common nighthawk (*Chordeiles minor*), white-throated swift (*Aeronautes saxatalis*), ash-throated flycatcher (*Myiarchus cinerascens*), violet-green swallow (*Tachycineta thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), mourning dove (*Zenaidura macroura*), pinyon jay (*Gymnorhinus cyanocephalus*), sagebrush sparrow (*Artemisiospiza nevadensis*), canyon towhee (*Melospiza fusca*), rock wren (*Salpinctes obsoletus*), and sage thrasher

(*Oreoscoptes montanus*). Raptor species include the golden eagle (*Aquila chrysaetos*), peregrine falcon (*Falco peregrinus*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus hudsonius*), northern goshawk (*Accipiter gentilis*), red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), American kestrel (*Falco sparverius*), flammulated owl (*Psiloscoops flammeolus*), and great horned owl (*Bubo virginianus*). Critical habitat for T&E avian species, including southwestern willow flycatcher (*Empidonax traillii extimus*) and Mexican spotted owl (*Strix occidentalis lucida*) (MSO) is also present within the Planning Area. These species, including habitat preference and current known populations, are discussed in detail in Section 6.10 of the 2022 AMS.

Several species of amphibians and reptiles are also known to occupy the Planning Area, such as tiger salamander (*Ambystoma tigrinum*), red-spotted toad (*Anaxyrus punctatus*), Woodhouse's toad (*Anaxyrus woodhousii*), canyon tree frog (*Hyla arenicolor*), Great Basin spadefoot (*Spea intermontane*), northern leopard frog (*Lithobates pipiens*), Utah night lizard (*Xantusia vigilis utahensis*), sagebrush lizard (*Sceloporus graciosus*), eastern fence lizard (*Sceloporus undulatus*), tree lizard (*Urosaurus ornatus*), side-blotched lizard (*Uta stansburiana*), plateau striped whiptail (*Cnemidophorus septemvittatus*), western rattlesnake (*Crotalus atrox*), night snake (*Hypsiglena torquata*), striped whipsnake (*Masticophis taeniatus*), and gopher snake (*Pituophis catenifer*). Population data are limited or non-existent for most of these species.

The Planning Area also includes a population of *Eucosma navajoensis*, an endemic species of moth recorded only in the vicinity of Comb Ridge and Valley of the Gods. This species is likely to be present in the Valley of the Gods ACEC and nearby areas within the Planning Area. Information or studies on this moth are not readily available.

The Planning Area is largely undeveloped; therefore, the habitats that support wildlife and fish are relatively undisturbed and play an important role in maintaining landscape intactness and connectivity for wildlife. Past and current impacts to fish and wildlife populations within the Planning Area include regular climactic variation and extreme weather events; recreation, including camping and hiking; development of roads and OHV use; livestock grazing management; vegetation management; competition with invasive species; and impacts related to noise from anthropogenic sources.

Birds, mammals, reptiles, insects, and other animals are inextricably tied to traditional Indigenous spiritual, cultural, and economic beliefs. Many species, especially bird and raptor species, are valued as brothers, sisters, and kin to Indigenous people. Traditional wildlife harvesting and rituals are a part of daily culture, ceremonies, and religious practices of Indigenous peoples (see Appendix L).

The general impacts discussed below pertain to all fish and wildlife species in the Planning Area unless the species is otherwise specifically mentioned.

3.4.11.1.1. Aquatic Wildlife and Fisheries Habitats

The Planning Area contains several Upper Colorado River Basin hydrologic systems, including the San Juan River, the Arch Canyon and Comb Wash tributaries, and Indian Creek (see Appendix A, Figure 3-27, Hydrologic unit code 10 watersheds within the Planning Area) and approximately 20,641 acres of riparian and aquatic habitat for aquatic wildlife and fish species. For this analysis, aquatic habitat is defined as wetland and aquatic features identified by the USFWS NWI data and riparian habitat is defined by the LANDFIRE riparian land cover classification data. These datasets were combined, avoiding overrepresentation of habitat by merging overlapping polygon features, to represent the total riparian and aquatic habitat within the Planning Area.

Aquatic habitat fragmentation (e.g., construction of reservoirs and other human-made barriers, or dewatering of stream segments leading to discontinuous flow), rising water temperatures, and reduced water quality and quantity, along with the introduction of nonnative fish species to many portions of the Upper Colorado River Basin, have contributed to the decline in native fish populations (UDWR 2014; USFWS 2022c). Some aquatic habitats within the Planning Area have experienced gradual degradation and fragmentation from anthropogenic influences due to expanding agricultural water and land use, increasing recreational disturbance, and the expansion of development and industry across the Planning Area and on lands upstream from the Planning Area (UDWR 2014). Other potential stressors are wildfire and natural disasters; increased water quantity demands via grazing; human population increase, increased industrial, agricultural, recreational, and municipal needs; low base and peak flow volumes; and related effects to channel morphology and habitat.

Aquatic invertebrate species such as midges, worms, snails, beetles, and freshwater shrimp can be used to gauge the health and availability of aquatic habitat. These organisms provide critical food sources for fish, birds, and mammals. Other habitat components important to healthy aquatic systems are stable riparian conditions, well-vegetated banks, and riparian zones with a multilayered canopy of woody and non-woody riparian vegetation, thermal refugia, floodplain connectivity, a gradient of velocities and substrates, and geomorphic habitat complexity. These features support the maintenance of water temperatures, facilitate dissipation of energy from storm runoff, and provide substrates for fish reproduction and food production.

The San Juan River, a major Colorado River tributary, borders the southern edge of the Planning Area. In these reaches, the San Juan River is a warm-water system with shallow, silty water well suited for several native fish species (USFWS 2022a). High spring runoff events carry heavy sediment loads through the river, and seasonal flood events create off-channel spawning and nursery habitat for native fish species (USFWS 2022b). Similarly, the warm, shallow, silty water in the Arch Canyon and Comb Wash tributaries, which flow south out of the Planning Area, also experience high-flow events that may contribute to off-channel spawning for several native fish species, especially near the confluence with the San Juan River; however, flows in the San Juan River have decreased due to environmental stressors (drought) and human-made diversions and infrastructure. As flows decline, dewatered rivers transition from wide, dynamic systems to narrow, channelized systems and riparian vegetation begins to colonize the active river channel. In many cases, this colonization leads to changes in vegetation community, introduction of noxious weeds, and, thus, alteration of riparian habitat. Flows from Indian Creek, which drains along the north side of the Abajo Mountains, may or may not reach the drainage's confluence with the Colorado River, depending on seasonal water fluctuations and high-flow events caused by warm season precipitation. Aquatic habitats in this stream system range from small coldwater systems in high-elevation wet meadows to ephemeral and intermittent streams bounded by sandstone canyons that are heavily affected by flash flood events and corresponding heavy sediment loads (Driscoll et al. 2019). See Section 6.10.1, Table 6.10-1 of the 2022 AMS for a list of fish species documented in these systems. Amphibian and aquatic invertebrate species require water sources to support part of their life cycle. Numerous areas (e.g., Arch Canyon, Grand Gulch, Indian Creek, riparian habitat along the San Juan River) within the Planning Area provide habitat for aquatic species. It should be noted that amphibians and aquatic invertebrates may be present anywhere water is present for any length of time. Adequate water quality is fundamental to supporting aquatic species populations (Poff et al. 2002). Climate change is the primary stressor for future potential water quality conditions. Increased drought, stream dewatering, and fish barriers pose substantial threats to sensitive aquatic species recovery and contribute to declining numbers. Types of aquatic barriers may include velocity barriers (such as peak flow events or low flow barriers) or physical obstacles (e.g., dams, irrigation structures, culverts); however, barriers can also protect fish populations from predators, hybridization, and disease. For example, natural and engineered

physical barriers are used to protect cutthroat trout from competition with other nonnative fish species. See Section 6.10.1 of the 2022 AMS for a list of amphibian species documented or those that may be present in these systems.

Nonnative predation on and resource competition with native fish species also threaten native aquatic populations throughout Utah (USFWS 2022c). The Upper Colorado River Basin Nonnative and Invasive Aquatic Species Prevention and Control Strategy identifies several nonnative aquatic species that are incompatible with the recovery and preservation efforts for endangered and native aquatic species with known critical habitat in the upper Colorado River Basin. These species consist of northern pike (*Esox lucius*), smallmouth bass (*Micropterus dolomieu*), walleye (*Sander vitreus*), white sucker (*Catostomus commersoni*), red shiner (*Cyprinella lutrensis*), burbot (*Lota lota*), and several introduced catfish species. The introduction of nonnative crustacean, mollusks, cestodes, and plants are also identified and prohibited. In particular, nonnative predatory fish (e.g., smallmouth bass, northern pike, walleye, and catfish) place direct stressors on native fish populations by consuming eggs and juvenile fish, thereby contributing to a population bottleneck. Nonnative fish also alter aquatic habitat by disturbing aquatic vegetation, thus disrupting production of the aquatic food web. Finally, nonnative fish populations directly outcompete native fish species for habitat and resources.

3.4.11.1.2. Terrestrial Wildlife Habitats

Each species of wildlife depends uniquely on vegetation resources such as forage, shelter, and nest sites. Some species may require intact, native-dominated vegetation communities, whereas others may have a broader range of tolerance or preference that may include some human-modified areas. Major vegetation communities that make up wildlife habitat in the Planning Area include sagebrush and blackbrush shrub, arid grassland, mixed-desert shrub, pinyon-juniper woodlands, montane forest, and riparian communities (see Section 3.4.4 for a detailed description of vegetation communities in the Planning Area). Each of these communities supports a variety of wildlife species; Section 6.10.1 of the 2022 AMS discusses wildlife species that may be present in each of these communities in more detail.

In general, wildlife populations have been impacted by activities that cause habitat loss, degradation, or disturbance. Increases in land use activities and increased human disturbance to wildlife populations threaten vegetation communities and contribute to habitat fragmentation, create additional displacement of animals within the Planning Area, decrease overall vegetation habitat health, and reduce wildlife habitat availability and quality. The availability of quality habitat, forage production, and prey availability are directly correlated with population viability. Recent drought conditions have resulted in downward trends for some species (Bryce et al. 2012) and are expected to increase with frequency over time. Therefore, the effects of climate change and impacts to wildlife habitat are considered in this analysis. Vegetation communities such as shrublands (especially big sagebrush and blackbrush Mormon tea communities), riparian vegetation, and pinyon-juniper woodlands provide valuable habitat for some wildlife species and are expected to have the greatest exposure (i.e., higher probability for change) (Bryce et al. 2012). Section 6.10.1 of the 2022 AMS discusses climate change threats in more detail.

Game Species

The diverse landscape of the Planning Area supports habitat for upland and big game species (collectively referred to as game species). Portions of the San Juan Wildlife Management Unit, including the Abajo Mountains, Elk Ridge, Hatch Point, San Juan Lockhart, North San Juan, and South San Juan subunits, overlap with the Planning Area. Game populations within these subunits

are managed by UDWR. Game species have been harvested by Indigenous people for millennia, for both sustenance and ceremonial purposes (see Appendix L).

Big game species known to occur within the Planning Area are mule deer, Rocky Mountain elk (*Cervus elaphus nelsoni*), pronghorn (*Antilocapra americana*), and desert bighorn sheep (*Ovis canadensis nelsoni*). Other large mammal species managed by the UDWR are black bear and mountain lion. UDWR classifies big game habitats as crucial, substantial, yearlong, spring, summer, fall, and winter. Crucial habitats contain the necessary resources for species survival and reproduction. Substantial habitat is an area used by a species that is not crucial for population survival. Yearlong habitats are used by species through all seasons. Big game species also rely on migration corridors or paths that species use to travel between summer and winter habitats, as well as stopover areas, which are localized areas consistently used by ungulates to rest and feed during spring and fall migration. Big game species are reliant on crucial winter and summer habitats and availability of prey species; therefore, degradation and loss of crucial habitat areas has a significant impact to species populations.

Upland game species occupy a range of diverse habitats within the Planning Area, and annual fluctuations in population size are attributed to fluctuations in annual weather patterns, particularly during nesting, rearing seasons, and winter conditions (UDWR 2022). Unlike big game species, most upland game species do not concentrate in winter range areas where populations can easily be monitored, so limited data about current populations are available. The Utah Wildlife Migration Initiative aims to “document, preserve and enhance wildlife movement for species throughout Utah” (Utah Division of Natural Resources 2023). Using state-of-the-art technologies, the state of Utah is working to map out movement and migration patterns of big game species and identify areas to reconnect fragmented habitats (Utah Division of Natural Resources 2023). Upland game populations are currently managed through postseason harvest surveys and opportunistic sightings and are currently augmented by the UDWR stocking program; these populations may experience short-term trends that increase, decrease, or maintain wild population sizes (UDWR 2022). As with general wildlife, upland game species have been experiencing habitat degradation and fragmentation due to natural and anthropogenic disturbances such as wildfires, recreation, and vegetation management (UDWR 2022). Section 6.10.1 of the 2022 AMS lists upland game species that may be present in the Planning Area.

Desert bighorn sheep is a species that is native to the Planning Area, but UDWR has been augmenting the populations to promote genetic diversity and to expand the existing population for hunting and viewing opportunities. The San Juan Lockhart, North San Juan, and South San Juan subunits overlap with the Planning Area and provide high-quality habitat for the species, although population trends vary per subunit (BLM 2007). The landscape is characterized by steep talus slopes, numerous side canyons, and broad mesas that provide areas for foraging and safety and are used year-round by the species (UDWR 2019). Approximately 423,886 acres of yearlong bighorn sheep habitat is present within the Planning Area (see Section 6.10.1, Figure 6.10-2 in the 2022 AMS). Habitat within the Planning Area is in generally good condition, although increased OHV and road access is resulting in habitat fragmentation. Diminishing water sources and foraging opportunities are also causing stress to local desert bighorn sheep populations (BLM 2007). Section 6.10.1 of the 2022 AMS discusses the species’ populations and trends within the Planning Area in more detail.

Pronghorn occupy large rolling plains or grasslands that provide ample shrub and forb communities for foraging. Fawning occurs throughout the range of this species, and lactating females rely on succulent forbs in the spring and early summer and require high-quality browse above snow level in winter (UDWR 2017). Pronghorn are typically found year-round in the Dry Valley and Hatch Point areas adjacent to the Planning Area. Approximately 6,616 acres of yearlong crucial pronghorn

habitat exists within the Planning Area (see Section 6.10.1, Figure 6.10-3 in the 2022 AMS). UDWR augments pronghorn populations within the Planning Area, and population trends are stable. Section 6.10.1 of the 2022 AMS discusses pronghorn populations and trends within the Planning Area in more detail.

Mule deer use a range of habitat types within the Planning Area for summer and winter survival, including portions of the Abajo Mountains and Elk Ridge subunits (BLM 2007). Mule deer summer range within the Planning Area, which is limited, primarily consists of Gambel oak woodlands, aspen and mixed conifer forests, and montane meadows. Summer range is also crucial fawning habitat for the San Juan population. In winter, mule deer primarily rely on sagebrush shrublands and pinyon-juniper woodland habitats. Beef Basin and Harts Draw near Indian Creek are crucial wintering areas within the Planning Area. Within the Planning Area, there are 118,695 acres of spring/fall crucial, 195,772 acres of summer crucial (fawning), 222,428 acres of winter substantial, and 491,230 acres of winter crucial habitats (see Section 6.10.1, Figure 6.10-4 in the 2022 AMS). Population trends are stable to low within the subunits overlapping the Planning Area resulting from harsh winters and drought conditions impacting fawn survivorship and winter survival. Section 6.10.1 of the 2022 AMS discusses mule deer populations and trends within the Planning Area in more detail.

Elk are habitat generalists with varied diets consisting of forbs, grasses, and shrubs (USDA Forest Service 2005), which allows them to survive in a variety of habitat types, including montane forest and low desert shrubland. The San Juan Elk Herd Unit overlaps with the Planning Area, and this population follows seasonal migration patterns, spending summers in high-elevation aspen and conifer forest and moving to mid- or low-elevation shrub and sagebrush communities during the winter. Within the Planning Area, there are 26,404 acres of spring/fall crucial, 100,927 acres of summer crucial (fawning), 128,837 acres of winter substantial, and 269,978 acres of winter crucial habitats (see Section 6.10.1, Figure 6.10-5 in the 2022 AMS). Populations that use the Planning Area are limited by the availability of suitable habitat (Table 3-44). Section 6.10.1 of the 2022 AMS discusses elk populations and trends within the Planning Area in more detail.

Table 3-44. Big Game Species Habitat within Bears Ears National Monument

Species	Crucial Spring/Fall Habitat (acres)	Crucial Summer Habitat (acres)	Crucial Winter Habitat (acres)	Substantial Winter Habitat (acres)	Yearlong Habitat	Total Habitat (acres)
Desert bighorn sheep	-	-	-	-	X	423,886
Mule deer	118,695	195,772	491,230	222,428	-	1,028,125
Pronghorn	-	-	-	-	-	6,616
Elk	26,404	100,927	269,978	128,837	-	526,146

In the Intermountain West, black bears are typically associated with forested or brushy mountain environments and wooded riparian corridors. From November to April, bears enter a period of winter dormancy. Winter dens are located in caves, under rocks, or beneath the roots of large trees (UDWR 2011). The Planning Area overlaps with the San Juan Black Bear Hunt Unit. Within the Planning Area, there are 277,428 acres of yearlong crucial habitat (see Section 6.10.1, Figure 6.10-6 in the 2022 AMS). Population trends for this species are currently stable. Section 6.10.1 of the 2022 AMS discusses black bear management, population objectives, and trends in more detail.

Mountain lions (also referred to as cougars) are commonly found in the rough, broken terrain of foothills and canyons, often in association with montane forests, shrublands, and pinyon-juniper

woodlands. Mule deer is the preferred prey species, and seasonal habitat use is likely to parallel that of mule deer. The Planning Area overlaps with the former San Juan Cougar Hunt Unit (see Section 6.10.1, Figure 6.10-7 in the 2022 AMS). No mapped habitat is available for the Planning Area. Population trends for this species in the Planning Area are unknown. Section 6.10.1 of the 2022 AMS discusses mountain lion populations and trends in the Planning Area in more detail.

3.4.11.1.3. Special Status Species

The Planning Area is characterized by a diverse array of habitats and unique landforms that provide habitat for many special status species to persist and reproduce. Section 6.10.1 of the 2022 AMS discusses the special status species shown in Table 3-45. This information is incorporated into this section by reference. Special status species that may occur within the Planning Area consist of the following:

- Eight threatened or endangered species currently listed under the ESA: four bird species (California condor [*Gymnogyps californianus*], MSO, southwestern willow flycatcher, and yellow-billed cuckoo) and four fish species (bonytail, Colorado pikeminnow, humpback chub, and razorback sucker)
- One candidate species and one proposed threatened species (monarch butterfly and silverspot butterfly), both of which are insect species
- Sixty-four sensitive species and SGCN listed by the BLM, USDA Forest Service, UDWR, and USFWS Birds of Conservation Concern (BCC)/Utah Partners in Flight (PIF) (in addition to the threatened, endangered, candidate, and proposed threatened species)
- An unidentified number of culturally important species

The sensitive species and SGCN presented in Table 3-45 may overlap with culturally important species. Occurrence determinations were developed with the aid of UDWR occurrence records and correspondence with BLM and USDA Forest Service biologists.

Table 3-45. Special Status Species Known to Occur or with Potential to Occur within the Planning Area

Common Name	Scientific Name	Status	Habitat Description and Potential for Occurrence within BENM
Amphibians			
Great Plains toad	<i>Anaxyrus cognatus</i>	BSS	Found in cropland/hedgerow, desert, grassland/herbaceous, shrubland/chaparral, and orchard habitats. Known to occur within BENM.
Northern leopard frog	<i>Lithobates pipiens</i>	SGCN	Breeding and overwintering habitat consists of slow-moving waters and emergent vegetation adjacent to semi-open, wet meadows. Known to occur within BENM.
Birds			
American three-toed woodpecker	<i>Picoides dorsalis</i>	BSS/FSS	Nests and winters in coniferous forests generally above 8,000 feet. Known to occur within BENM.
American white pelican	<i>Pelecanus erythrorhynchos</i>	BSS, Utah SGCN	Found in shallow freshwater lakes, wetlands, and edges of lakes and rivers. Not known to nest within BENM but has been observed at Recapture Reservoir and on the San Juan River.
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, BSS, FSS, Utah SGCN	Roost and nests in tall trees near bodies of water. Not known to nest within BENM; has been observed during migratory patterns during winter months.

Common Name	Scientific Name	Status	Habitat Description and Potential for Occurrence within BENM
Band-tailed pigeon	<i>Patagioenas fasciata</i>	Utah SGCN	Found between 5,000 and 10,000 feet of elevation, in coniferous or mixed forests dominated by pines and oaks. Known to occur within BENM.
Black rosy-finch	<i>Leucosticte atrata</i>	SCC, BCC, PIF, Utah SGCN	Breeds along cliffs and in talus in alpine areas. Over winter, the species descends below tree line into intermountain valleys. Known to occur in winter within BENM.
Black-chinned sparrow	<i>Spizella atrogularis</i>	BCC, PIF	Found in arid brushlands and grasslands on rugged mountain slopes. Known to occur within BENM.
Bobolink	<i>Dolichonyx oryzivorus</i>	BSS, PIF	Occupies wet meadows, irrigated agricultural fields, and habitats associated with riparian and/or wetland areas. Known to occur in San Juan County; may occur within BENM.
Broad-tailed hummingbird	<i>Selasphorus platycercus</i>	BCC	Found in mountain meadows and forests, including pine-oak and pinyon-juniper woods and spruce, Douglas-fir, and aspen. May occur within BENM; species range includes BENM.
Burrowing owl	<i>Athene cunicularia</i>	BSS, Utah SGCN	Occupies open grasslands and prairies. Observed within BENM along Indian Creek and the Colorado River.
California condor*	<i>Gymnogyps californianus</i>	FE, Utah SGCN, PIF	Roosts and nests in cliff habitats; forages in open areas. May occur within BENM. BENM is within the experimental population range, with one small portion east of US-191 outside the experimental range where California condor is considered endangered, but breeding has not been recorded.
California gull	<i>Larus californicus</i>	BCC	Breeds near lakes and marshes. May occur within BENM.
Cassin's finch	<i>Haemorhous cassinii</i>	BCC, PIF	Found in dry, open coniferous forests mostly at middle elevations. Known to occur within BENM.
Clark's grebe	<i>Aechmophorus clarkii</i>	BCC	Nests on large freshwater lakes and marshes with emergent vegetation. May occur within BENM.
Clark's nutcracker	<i>Nucifraga columbiana</i>	BCC	Found in mountain coniferous forests and is especially dependent on pine trees (e.g., whitebark pine, limber pine, pinyon). Known to occur within BENM.
Evening grosbeak	<i>Hesperiphona vespertina</i>	BCC, PIF	Breeds in coniferous and mixed forests. Known to occur within BENM.
Ferruginous hawk	<i>Buteo regalis</i>	BSS, Utah SGCN	Found in arid and semiarid grasslands and mid-elevation plateaus. No known nests within BENM; has been observed foraging within the Planning Area.
Flammulated owl	<i>Psiloscopus flammeolus</i>	FSS, BCC, PIF	Occupies montane coniferous forests. Known to occur within BENM.
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA, BSS, MIS, Utah SGCN	Prefers open areas for hunting, surrounded by hills, cliff edges, or mountains where it can roost and nest. Known to occur within BENM.
Grace's warbler	<i>Setophaga graciae</i>	BCC, PIF	Breeds in ponderosa pine and mixed conifer habitats. Known to occur within BENM.
Lewis's woodpecker	<i>Melanerpes lewis</i>	BSS, BCC, Utah SGCN, PIF	Occupies ponderosa pine, Douglas-fir, mixed conifer, pinyon-juniper, and oak forests; also found in riparian cottonwoods. Known to occur within BENM.
Long-billed curlew	<i>Numenius americanus</i>	BSS	Occupies grasslands and herbaceous habitats. Known to occur within BENM.
Long-eared owl	<i>Asio otus</i>	Utah SGCN	Preferred habitat is pine stands or woods near grasslands and pastures. May occur within BENM.

Common Name	Scientific Name	Status	Habitat Description and Potential for Occurrence within BENM
MSO	<i>Strix occidentalis lucida</i>	FT, Utah SGCN	Occupies steep, rocky canyons. Known to occur but uncommon within BENM; present in areas with mixed-age forests with undisturbed cliff faces, canyons, and caves.
Northern goshawk	<i>Accipiter gentilis</i>	FSS, BSS,† MIS	Occupies mature mountain forest and riparian zone habitats. Known to occur within BENM; nests at higher elevations within BENM.
Olive-sided flycatcher	<i>Contopus cooperi</i>	BCC, Utah SGCN	Found in coniferous mountain forests, bogs, and muskeg. Known to occur within BENM.
Peregrine falcon	<i>Falco peregrinus</i>	FSS, Utah SGCN	Found in steep, rocky canyons near riparian or wetland areas. Known to occur within BENM; may nest within suitable habitat (cliffs).
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	BCC, PIF, Utah SGCN	Found in pinyon-juniper woodlands. Known to occur within BENM.
Scaled quail	<i>Callipepla squamata</i>	PIF	Found in dry desert grasslands and shrublands. May occur within BENM.
Short-eared owl	<i>Asio flammeus</i>	BSS, BCC	Occupies grasslands, shrublands, and other open habitats. No known occurrences within BENM; non-breeding range includes BENM.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE, Utah SGCN	Found in low scrub, thickets, or groves of small trees, often near watercourses. Uncommonly occurs along riparian corridors associated with the Colorado and San Juan Rivers; potential breeding habitat may be present along the San Juan River within BENM.
Virginia's warbler	<i>Leiothlypis virginiae</i>	BCC, PIF	Breeds in deciduous woodlands on steep mountain slopes. Known occurrences in Fish Canyon and elsewhere within BENM.
Western grebe	<i>Aechmophorus occidentalis</i>	BCC, Utah SGCN	Nests on large freshwater lakes and marshes with emergent vegetation. May occur within BENM.
White-faced ibis	<i>Plegadis chihi</i>	SGCN	Found in freshwater marshes, flooded pastures, and irrigated fields. Known to occur within BENM.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	FT, Utah SGCN	Occupies riparian habitats and cottonwood galleries. May occur along riparian corridors associated with the Colorado and San Juan Rivers; potential breeding habitat may be present along the San Juan River within BENM.
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	BCC	Found in grasslands, prairies, and woodland edges. Known to occur within BENM.
Fish			
Bluehead sucker	<i>Catostomus discobolus</i>	BSS,† SCC, Utah SGCN	Occupies fast-flowing water in high-gradient reaches of mountain rivers. Known occurrences in Arch Canyon and the San Juan River, may be present in other tributaries of the Colorado River within BENM.
Bonytail	<i>Gila elegans</i>	FE, Utah SGCN	Found in backwaters with rocky or muddy bottoms and flowing pools. May occur within BENM. Assumed present in upper Colorado River tributaries during migration periods.
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	FE, Utah SGCN	Adults found in habitats ranging from deep, turbid rapids to flooded lowlands; young prefer slow-moving backwaters. Known to occur within the San Juan River; critical habitat is designated along the San Juan River bordering BENM.

Common Name	Scientific Name	Status	Habitat Description and Potential for Occurrence within BENM
Colorado River cutthroat trout	<i>Oncorhynchus clarkii pleuriticus</i>	BSS [†]	Found in steep coldwater streams and rivers, often headwater streams in Utah. Specific occurrences within BENM are unknown; may be present in tributaries of the Colorado River within BENM.
Flannelmouth sucker	<i>Catostomus latipinnis</i>	BSS, [†] Utah SGCN	Occupies large rivers; often found in deep pools of slow-flowing, low-gradient reaches. Known occurrences in Arch Canyon and the San Juan River; may be present in other tributaries of the Colorado River within BENM.
Humpback chub	<i>Gila cypha</i>	FT, Utah SGCN	Adults found in turbulent, high-gradient, canyon-bound reaches. May occur within BENM. Assumed present in upper Colorado River tributaries during migration periods.
Razorback sucker	<i>Xyrauchen texanus</i>	FE, Utah SGCN	Occupies slow backwater habitats and impoundments. Known to occur within the San Juan River; critical habitat is designated along the San Juan River bordering BENM.
Roundtail chub	<i>Gila robusta</i>	BSS, [†] Utah SGCN	Occupies large rivers, most often in murky pools near strong currents. Known occurrences in the San Juan River, may be present in other tributaries of the Colorado River within BENM.
Invertebrates			
Aquatic macroinvertebrates	Dependent on species	MIS	Larvae can be found in aquatic habitats, including lakes, streams, tunnels, and canals, whereas adult and subimago stage invertebrates vary in occurrence based on specific species characteristics. Specific species are possible or known to occur within BENM.
Monarch butterfly	<i>Danaus plexippus</i>	FC	Breeding habitat is limited to areas with milkweed species (<i>Asclepias</i> spp.). Known to occur within BENM.
Pale morning dun	<i>Ephemera exrucians</i>	MIS	Larval stage occupies freshwater environments, whereas subimago and adult stages are found along freshwater banks associated with their emergent sites. Known to occur within BENM.
Silverspot butterfly	<i>Speyeria nokomis nokomis</i>	FpT	Occurs in permanent spring-fed meadows, seeps, marshes, and boggy streamside meadows. Known to occur in elevations ranging from 5,200 feet to slightly over 8,300 feet. May occur within BENM. The Planning Area is within the potential range of this species.
Western bumblebee	<i>Bombus occidentalis</i>	BSS, SCC	Occupies a range of habitats, including mixed woodlands, cropland, montane meadows, prairie grasslands, and urban areas. May occur within BENM; species range includes BENM.
Western green drake	<i>Drunella doddsii</i>	MIS	Larval stage occupies freshwater environments whereas subimago and adult stages are found along freshwater banks associated with their emergent sites. Known to occur within BENM.
Utah sallfly	<i>Sweltsa gaufini</i>	SCC, MIS	Nymphs are found in aquatic habitat in the stony bottoms of cold, permanent, and continuously flowing mountain streams. Populations are localized in the La Sal and Abajo Mountains. May occur within BENM.
Yavapai mountainsnail	<i>Oreohelix yavapai</i>	Utah SGCN	Found at higher elevations in aspen groves and spruce stands with open spaces of coarse grass and slides of sandstone. May occur within BENM; known from a historical sample collection in western San Juan County.

Common Name	Scientific Name	Status	Habitat Description and Potential for Occurrence within BENM
Mammals			
Abert's squirrel	<i>Sciurus aberti</i>	MIS	Found foraging and nesting within pine trees in mature ponderosa pine forests. Habitat can also extend into mixed conifer and upper pinyon-juniper woodlands. Known to occur within BENM.
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	BSS, Utah SGCN	Occupies rocky and riparian areas in woodland and scrubland. Known to occur within BENM.
Big free-tailed bat	<i>Nyctinomops macrotis</i>	BSS	Found in rocky and woodland habitats. Known range overlaps BENM.
Bighorn sheep	<i>Ovis canadensis</i>	FSS	See Game Species subsection above. Known to occur within BENM.
Dwarf shrew	<i>Sorex nanus</i>	Utah SGCN	Found along rocky slopes with ponderosa pines, sedge marsh, pinyon-juniper woodlands, arid shortgrass prairies, subalpine meadows, and dry stubble fields. Known to occur within BENM.
Fringed myotis	<i>Myotis thysanodes</i>	SCC, Utah SGCN, BSS	Found in desert and woodland areas; roosts in caves, mines, and buildings. Known to occur within BENM.
Gunnison's prairie-dog	<i>Cynomys gunnisoni</i>	BSS, Utah SGCN	Found in grasslands and semidesert and montane shrublands. Known to occur within BENM.
Kit fox	<i>Vulpes macrotis</i>	BSS, Utah SGCN	Occupies semidesert grasslands and open shrublands. Occurrences are unknown within BENM, although spatial prediction analyses show this species occurring from the Cedar Mesa area north to Indian Creek.
Long-eared myotis	<i>Myotis evotis</i>	Utah SGCN	Found across lowland, montane, and subalpine forests; wooded stream courses; meadows; and shrublands. Daytime roosting occurs in caves and rock crevices as well as snags, hollow trees, and stumps. Known to occur within BENM.
Mule deer	<i>Odocoileus hemionus</i>	MIS	See Game Species subsection. Known to occur within BENM.
Rocky Mountain elk	<i>Cervus elaphus nelsoni</i>	MIS	See Game Species subsection. Known to occur within BENM.
Silky pocket mouse	<i>Perognathus flavus</i>	BSS	Found in sandy soils in arid grassland, woodland, and sagebrush areas. Known range overlaps BENM.
Spotted bat	<i>Euderma maculatum</i>	BSS, FSS, Utah SGCN	Uses various vegetation types, from desert shrub to montane forests; roosts in rock crevices high on steep cliff faces. Known to occur within BENM.
Townsend's big-eared bat; Townsend's western big-eared bat	<i>Corynorhinus townsendii</i> ; <i>Corynorhinus townsendii townsendii</i>	BSS, FSS (Western subspecies only), SCC, Utah SGCN	Occurs across many habitats but is often found near forested areas; roosts and hibernates in caves, mines, and buildings. Known to occur within BENM.
Western red bat	<i>Lasiurus blossevillii</i>	BSS, Utah SGCN	Occupies riparian channels dominated by cottonwoods, oaks, sycamores, and walnuts. Summer roosting usually takes place in tree foliage or large leafy shrubs. May occur within BENM.
Yuma myotis	<i>Myotis yumanensis</i>	Utah SGCN	Occurs across a variety of habitats, including riparian, desert scrub, moist woodlands, and forests, but is usually found near open water for foraging. Roosts are in caves, cliffs, abandoned cliff swallow dwellings, and cavities and nooks in large live trees. May occur within BENM.
Reptiles			
Corn snake	<i>Elaphe guttata</i>	BSS	Found near streams or in rocky or forest habitats. Known to occur within BENM.

Common Name	Scientific Name	Status	Habitat Description and Potential for Occurrence within BENM
Desert night lizard	<i>Xantusia vigilis</i>	BSS	Occupies arid and semiarid habitats; ranges into pinyon-juniper, sagebrush-blackbrush, and chaparral-oak. Occupies habitat along the Colorado River in western San Juan County; occurrences may extend into BENM.
Midget faded rattlesnake	<i>Crotalus concolor</i>	Utah SGCN	Occurs in sagebrush communities with rocky outcrops which can provide variable thermal conditions, cover, and safe hibernation areas. Known to occur within BENM.
Smooth green snake	<i>Opheodrys vernalis</i>	BSS	Prefers moist habitats, especially moist, grassy areas and meadows. Known to occur within BENM.

Sources: BLM (2018); eBird (2022); PIF (2016); Smith et al. (2022); UDWR (2020e, 2023); USDA Forest Service (2020); USFWS (2020, 2021, 2022a). Status: BGEPA = Bald and Golden Eagle Protection Act; MIS: Manti-La Sal National Forest Management Indicator Species; PIF= Partners in Flight Priority Species; BCC = Birds of Conservation Concern; FE = federally endangered species; FC = candidate species for listing; FpT = proposed for listing as threatened; FT = federally threatened species.

* The Planning Area is partially within the species' non-essential experimental population (NEP) area. Under Section 9 of the ESA, members of NEP populations within designated NEP areas are treated as species proposed for listing. Members of NEP populations outside designated NEP areas are treated as they are listed under the ESA.

† Conservation agreement species. Conservation agreements are developed to expedite implementation of conservation measures for species in Utah as a collaborative and cooperative effort among resource agencies.

The Planning Area contains designated critical habitat for four ESA-listed species: Colorado pikeminnow, MSO, razorback sucker, and southwestern willow flycatcher (Table 3-46). Two listed fish species, bonytail and humpback chub, do not have designated critical habitat within the Planning Area, although designated critical habitat for these species is located upstream and downstream along the Colorado and Green Rivers outside the Planning Area (USFWS 2022c).

Table 3-46. Acres of Designated Critical Habitat within the Planning Area

Species	Acres	Units
Colorado pikeminnow	595	Upper Colorado River Basin
MSO	595, 211	CP-14: Dark Canyon Primitive and Wilderness, San Juan, Wayne, and Grand Counties, Utah
Razorback sucker	595	Upper Colorado River Basin
Southwestern willow flycatcher	905	Unit 17: San Juan Management Unit

Source: USFWS (2022c).

Generally, populations of special status species are experiencing similar trends to those discussed for aquatic and terrestrial habitats; however, due to the inherently restricted distributions, specialized habitat requirements, and/or increased susceptibility to habitat loss or disturbance, impacts to habitat may be more acute for special status species. Section 6.10.1 of the 2022 AMS discusses specific trends and stressors, as available, for special status species. This information is incorporated into this section by reference.

BENM is within the experimental population range of the California condor. Since publication of the 2022 AMS, the California condor population experienced an outbreak of the H5N1 strain of bird flu in the Utah and Arizona population, resulting in the mortality of 20 of the 116 condors in the wild population as of April 17, 2023 (The Peregrine Fund 2023), equating to a loss of 17% of the current population. The California condor and other special status raptor species, such as bald eagles and golden eagles, are also susceptible to lead poisoning through the ingestion of lead ammunition.

3.4.11.2. ENVIRONMENTAL CONSEQUENCES

This section describes direct, indirect, and cumulative effects on fish, wildlife, and special status species from implementation of management direction under each alternative.

3.4.11.2.1. Issues

- How would proposed management affect wildlife and fisheries habitat and populations including special status species and species otherwise generally identified in Proclamations 10285 and 9558?
- How would the proposed management affect state wildlife agency habitat management goals and associated actions related to big game winter and summer range movement and migration corridors and migration corridors for birds, insects, and fish?

3.4.11.2.2. Impacts Common to All Alternatives

This section describes the mechanisms of impacts, and the impacts associated with those mechanisms, for wildlife and fish associated with all alternatives. Under each heading below for impacts associated with specific alternatives, relative levels of impacts are discussed, according to management direction for that alternative. To avoid unnecessary repetition, the specific impacts and their mechanisms are not repeated under the alternative headings. Readers should refer to this section for those impacts and mechanisms.

The objective identified by Proclamation 10285 is to ensure “the preservation, restoration, and protection of the objects of scientific and historic interest on the Bears Ears region, including the entire monument landscape.” Thus, many management actions under all alternatives are intended to meet that objective, and those actions may directly or indirectly benefit terrestrial and aquatic wildlife species and their habitat. These actions are balanced differently under each alternative with other types of management, resource concerns, discretionary actions, and land use that may result in adverse impacts to terrestrial and aquatic wildlife species and their habitat.

Under all alternatives, management actions intended to benefit wildlife and fisheries would include incorporation of Tribal and state conservation strategies; collaboration with the BEC and the State of Utah to manage crucial big game habitat and determine other seasonal restrictions; measures to protect nesting birds during implementation of all projects, including vegetation management; design of fencing construction and maintenance to avoid the creation of barriers to wildlife movement; managing vegetation with the objective of improving habitat quality for native species; and implementing BMPs where appropriate to avoid, minimize, or mitigate impacts. As a result, implementation of management activities under all alternatives would protect, preserve, and restore existing habitat for wildlife. Management actions would incorporate collaboration with the BEC and Tribal Nations to manage wildlife and habitats. This includes incorporating Traditional Indigenous Knowledge in managing wildlife and habitats, controlling invasive and nonnative plants, preserving, restoring, determining seasonal closures and other closures necessary to address resource concerns and traditional use, and protecting BENM objects. Collaboration with the BEC would likely result in more focused management of culturally important species and communities, as well as more holistic, ecologically minded approaches to habitat management.

This section provides a qualitative discussion of potential impacts and provides quantitative information on the acreage under each alternative where certain types of discretionary actions may be authorized or restricted. Discretionary actions that may be authorized under any alternative during the life of this RMP/EIS, such as issuing a ROW or implementing a specific habitat improvement project, would be subject to action-specific NEPA analysis, which would include the

development of mitigation measures tailored to that action. Those mitigation measures are anticipated to avoid or minimize many potential impacts discussed in this section. Some impacts not tied to a specific future discretionary action, such as those associated with recreational activity, are likely to result in impacts that are approximately proportional to the level of use or the acreage where that use is authorized.

Within BENM, special designations (ACECs, RNAs, wilderness, WSAs, non-WSA LWC, and WSRs) generally provide a higher level of protection (e.g., limits on the types and intensity of recreational use, grazing, and surface disturbance) than areas without those designations. Some of these special designations are intended to protect biological resources, and others may be designated for culturally important areas and paleontological resources. The protections provided by special designations are likely to benefit terrestrial and aquatic wildlife, even if the protection of those species was not the primary intent of the special designation. ACECs, in particular, may be designated to protect special status species habitat such as rare plant habitat or important aquatic sites. The Valley of the Gods ACEC contains some habitat for the local endemic *Eucosma navajoensis* moth, and this ACEC is carried forward under all alternatives. As more is understood regarding the ecology of this moth, actions could be taken within ACECs to protect this BENM object.

Aquatic Wildlife and Fisheries Habitats

Impacts to aquatic wildlife and their associated habitats are both directly and indirectly affected by management activities that have the potential to affect water quality, water quantity, habitat connectivity, geomorphology, substrate composition or the health of riparian areas. Such management activities may include changes in public land use and recreation, resource use, surface-disturbing activities, or restoration/preservation activities. Under all alternatives, aquatic wildlife and fisheries habitats would be managed to promote and restore healthy riparian habitat throughout the Planning Area; however, the impacts of management actions that may occur outside or upstream of the Planning Area would also need to be considered because these actions may also impact riparian and aquatic habitats within the Monument.

Riparian areas provide important habitat for amphibian and some reptile species, including corn snake (*Elaphe guttata*), smooth green snake (*Opheodrys vernalis*), and northern leopard frog (*Lithobates pipiens*). The greatest impacts to amphibians and riparian-obligate reptiles include aquatic habitat alteration from water withdrawals and stream diversions (within or outside the Planning Area), water pollution, and OHV use or other surface-disturbing activities in adjacent upland habitats (NPS 2015). Some aquatic species, such as some macroinvertebrates and coldwater fish (e.g., members of the minnow [Cyprinidae] and trout [Salmonidae] families), are sensitive to changes in water quality, particularly changes in turbidity, sedimentation, or water temperature (Baker et al. 2003), though amphibious species and warm/coldwater fish species are generally less sensitive to changes in water quality. Species that are sensitive to temperature changes or require specific temperature ranges for breeding would be most likely to be impacted by management activities that impact water quality. Water temperatures across the southwestern and central United States are trending toward warmer conditions, and many aquatic species are already experiencing maximum thermal limitations (Roghair 2019). As a result, even the more tolerant species are likely to experience stress and impacts due to water quality changes under future conditions. Water quality parameters used for assessing the condition of aquatic habitat are detailed in Section 3.4.3.

Surface-disturbing activities can lead to increased sedimentation in aquatic habitat, soil compaction within riparian areas, loss of riparian vegetation, and erosion of streambanks. Loss of native vegetation along the riparian corridor due to surface disturbance could lead to bank

destabilization, noxious weed invasion, and altered vegetation communities. These disturbances may result from livestock grazing, ROW development, dispersed camping, OHV use, and other forms of recreational activities. These development activities could lead to compaction of soil in riparian areas, loss of native vegetation, erosion, and sedimentation and could alter bank stability and channel geomorphology, potentially leading to channel aggradation or degradation, widening or incising of channels, or other changes to stream morphology, especially where they would cross aquatic or riparian habitat. Potential impacts from OHV use include direct mortality from vehicle strikes, increased erosion, loss of native vegetation, and potential for fuel and oil contamination. The effects of these actions could result in decreased water quality (e.g., sedimentation and livestock feces), altered substrate composition (e.g., compaction and erosion), and thermal and geomorphic changes from a loss of vegetation canopy, thereby degrading habitat quality for fish and other aquatic species. These actions could lead to decreased habitat quality and habitat connectivity for avian, amphibious, and other species that might use riparian habitat for part or all of their life cycles. Impacts to riparian vegetation, including impacts from nonnative tree removal within riparian areas, could directly impact species that use riparian habitat by reducing vegetation cover for foraging, breeding, or protection from predator species.

Other impacts include changes to water quality (e.g., bathing, sunscreens, human and livestock waste) and quantity (e.g., recreational water pumping and spring development). Increased sediment load in aquatic systems has the potential to impact water quality by increasing turbidity, thereby decreasing dissolved oxygen availability for fish and aquatic wildlife. Chemical contaminants, including those generated from common herbicide and pesticide applications, have been shown to influence the ability of amphibians to handle environmental stressors such as reduced water availability and increasing water temperatures (NPS 2015). As a result, these management activities could cause direct mortality to amphibious and reptile species and have indirect impacts on aquatic habitats.

Management activities that reduce habitat availability, connectivity, or hydrologic function would impact aquatic species. Such management actions may include alterations to water diversions, dams, and reservoirs located within or upstream of BENM. Native sucker fish (Catostomidae family) habitat range and population viability can be restricted by construction of passage barriers and introduction of nonnative species (Rees et al. 2005). Alterations to surface water and groundwater flow could potentially decrease water availability and habitat for aquatic species or could create changes in water quality, including water temperature.

Because amphibians may occupy any habitat in the Planning Area where water is available, any management activity that impacts water availability could result in indirect impacts to the habitat of these species. In general, management alternatives that protect aquatic wildlife and habitat typically limit surface-disturbing activities such as water withdrawals, OHV use, livestock grazing, recreational use, vegetation management, and ROW development within and adjacent to riparian and aquatic areas would protect aquatic habitat. Under all alternatives, surface-disturbing activities would continue to be avoided within riparian areas where possible, and unavoidable disturbances would be minimized and or mitigated. Limitations on these types of activities help to promote a healthy riparian zone or aquatic buffer, which provides sufficient riparian vegetation to filter and reduce sediment loads, enhance bank stability, and provide cooler thermal microclimates in relation to the surrounding uplands (BLM 1993). A variety of management techniques such as exclusion fencing, development of alternative water sources away from riparian areas, and seasonal livestock removal are available to minimize livestock impacts to riparian areas. Under all alternatives, exclusion fencing that protects BENM objects would be allowed; however, management of off-site water sources would vary between alternatives and is disclosed under each alternative. Impacts to water resources, including riparian and wetland areas, are described in detail in Section 3.4.3.

Under all alternatives, agencies would identify vegetation management priorities with the goal of improving vegetation conditions to minimize uncharacteristic fire risk and to control the spread of invasive and nonnative species. Wildfire events can lead to loss of vegetation and changes to soil composition, which can result in more surface water flowing over the landscape during storms and runoff events (Murphy et al. 2018). Flooding and erosion can deliver sediment, ash, pollutants, and other organic and inorganic debris material to aquatic habitats, which can result in decreased water quality and stream habitat degradation. Removal of nonnative riparian vegetation by means of whole tree extraction methods would be used where practical. Although vegetation removal could cause bank instability and erosion of riparian areas, leading to reduced habitat quality for fish and aquatic wildlife, the impacts of removing nonnative vegetation to aquatic systems would be temporary. The long-term impacts of nonnative vegetation removal within riparian areas include increased native plant diversity, improved drought resiliency, and better-quality habitat for riparian and aquatic species.

In addition to the management actions described above, the designation of special management areas (such as designated wilderness areas, ACECs, and LWC) would provide for enhanced protection of riparian and aquatic habitats within their boundaries, because the management objectives within these areas would manage for the preservation and protection of specific resources and/or values.

AQUATIC SPECIAL STATUS SPECIES

Special status fish and aquatic species, including federally listed, state-recognized, and agency-specific management species, would be impacted by the same management activities that impact general fish and aquatic wildlife and the impacts to species populations would be indirectly correlated with the impacts to riparian areas and aquatic habitat (see Section 3.4.3). Management alternatives that limit or restrict surface-disturbing activities would likely reduce the risk of degradation of existing aquatic habitat for special status populations.

The impacts to Utah SGCN, BLM sensitive species, USDA Forest Service SCC, USDA Forest Service Management Indicator Species (MIS) would be similar to those described for general fish, amphibians, and aquatic invertebrates. Special status species tend to have specific habitat requirements, limited ranges, and lower population numbers than species without special status, which make them more susceptible to population-level effects than general aquatic species due to increased sensitivity to environmental stressors. Species such as cutthroat trout (*Oncorhynchus clarkii*) in Indian Creek are considered an indicator species, meaning population trends will generally correspond with habitat quality (Dare et al. 2011). Therefore, management activities that impact water quality are likely to have a disproportionately adverse effect on indicator species. The presence and availability of macroinvertebrates are also necessary for sustaining higher aquatic trophic levels, such as amphibians and fish, and impacts that modify macroinvertebrate populations would be compounded for higher-level aquatic wildlife.

Many avian species, including protected migratory bird species, yellow billed cuckoo (threatened), and southwestern willow flycatcher (endangered), rely on riparian habitat for nesting. Therefore, management activities that affect riparian vegetation can affect habitat for these species. Although critical habitat for southwestern willow flycatcher overlaps with riparian habitat along the San Juan River within the Planning Area, the impacts to this species are included in the Terrestrial Special Status Species sections for each alternative along with other special status avian species.

The impacts to fish species listed under the ESA would be similar to those described for general fish species because management plans would continue to emphasize the maintenance and restoration of critical habitat requirements for native fish, including Colorado pikeminnow and

razorback sucker designated critical habitat in the Colorado River Basin. ESA-listed species would likely benefit from management activities that align with USFWS federal guidelines outlined in the Upper Colorado River Endangered Fish Recovery Program (USFWS 1987). Under USFWS federal guidelines, any new water withdrawals or depletions occurring either within the Planning Area or upstream of the Planning Area would be subject to ESA Section 7 consultation to assess the potential impacts to T&E fish species.

Under the recovery program, impacts to these species from water withdrawals or depletions are minimized or mitigated through contribution of fees that are used for conservation projects to benefit the covered species. Support for the program is provided in terms of both annual and capital funds. Annual funding is authorized for monitoring of T&E fish populations and habitat, research, water management, nonnative fish management, public involvement, and program administration. Capital facilities for species recovery include hatcheries, fish passages, fish screens on water diversion structures to expand habitat and avoid entrainment of T&E fish, screens on reservoirs to avoid release of nonnative fish and to provide for reservoir sport fishing, restoration of habitat, and acquisition of water for T&E fish.

Although conservation measures are in place to minimize impacts to ESA species, authorization of surface disturbance, recreation, and other types of activities may occur within critical habitat designated for ESA-listed species under all alternatives. Authorization of these activities would require consultation or coordination with the USFWS, and measures would be developed with the USFWS that would be designed to avoid, minimize, or mitigate impacts to the features of the critical habitat that are essential to the ESA-listed species. The USFWS can require the implementation of reasonable and prudent conservation measures during consultation that are tailored to the potential impacts of a proposed action. Table 3-47 lists the total acreages of critical habitat that overlap areas with identified uses or management decisions under each alternative. The potential impact of some management decisions, such as designation of an RMA or RMZ, may not be entirely adverse or beneficial to aquatic habitat. Although recreation can result in impacts to aquatic habitat, management under RMA and RMZ designation can respond to potential impacts through adjustment of permitted uses and visitor levels.

Terrestrial Wildlife Habitats

Impacts common to all alternatives for terrestrial wildlife include any activities resulting in surface disturbance, as well as disturbance from human noise and activity. These impacts would largely be associated with discretionary uses such as ROW development, vegetation management, grazing, and recreational activities. Research has shown that wildlife responses to disturbances vary and can have detrimental effects such as altered behavior, reduced vigor, and decreased reproduction success (Anderson 1995). Disturbances would be more likely to occur in easily accessible areas, where human presence is high, and in areas where motorized use occurs. Permanent infrastructure such as roads, trails, parking lots, and campgrounds can disrupt movement patterns and migration routes for many wildlife species. Impacts also include the potential for injury or mortality to wildlife from vehicle collisions. If disturbances persist, many species may permanently avoid those areas. Although there is likely to be a change in the wildlife community in areas subject to human disturbance (i.e., a decrease in overall diversity), some species or individuals may adapt to disturbances over time and can recolonize disturbed habitats.

Short-term noise (such as from vehicles and humans) has been documented to cause physiological effects in a variety of wildlife species, including increased heart rate, altered metabolism, and a change in hormone balance (Radle 2007). Sources of noise include a variety of recreational activities such as OHV use, hiking, and recreational shooting as well as vegetation management and general management activities. Recreational activities that generate noise or result in the

potential for direct harm to wildlife, such as OHV use, or activities that may be concentrated in potentially sensitive locations, such as rock climbing or recreation near critical water sources, could contribute to greater and more direct disturbances than other activities that may be more dispersed, such as hiking. Cliff-nesting raptors and bat roosts, which may be in cliffs, caves, or human-made structures, can be highly sensitive to human presence.

Human presence can trigger avoidance or other behavioral changes by wildlife, even for activities that generate relatively low levels of noise. Taylor and Knight (2003) found that both hikers and mountain bikers displaced wildlife. Displacement can also result in selection of habitat based on distance from roads, trails, and other concentrated use areas and not on habitat quality (Wisdom et al. 2018). Displacement of wildlife causes increased energy expenditure, as human presence can often induce an antipredator response. Short-term disturbance and displacement can be relatively benign to the animal, often not causing long-term impacts, but species differ in their level of tolerance to human activity and the extent to which they may become acclimated to the disturbance source. In some cases, long-term or persistent disturbance may disproportionately affect certain species or individuals.

In addition to spatial avoidance, continued human activity in an area over time can drive wildlife to separate themselves from humans in time. High levels of human activity in an area can cause increases in nocturnal activity from many species (Gaynor 2018). Impacts would be both short-term and long-term, depending on the type and source of noise and disturbance. These impacts would be difficult to quantify because different species and even individuals of the same species can have varying responses to acoustic stimuli (Barber et al. 2011; Radle 2007).

Vegetation management can result in short-term and long-term impacts to wildlife, often over relatively large areas. Treatments such as prescribed fire, chaining, and invasive plant removal are intended to remove certain types of vegetation, which would temporarily reduce resources available for wildlife species that depend on that vegetation. Some wildlife species, including some birds, may benefit from the presence of recently burned areas. The long-term objectives of vegetation management include restoration of desirable ecosystem conditions, reduction of fuels that support unnatural fire regimes, and creation of conditions that favor the establishment of native over nonnative plants. When these objectives are met after treatments, wildlife species dependent on native vegetation communities are anticipated to benefit from the vegetation management.

Vegetation management can result in the loss of nesting habitat and direct harm to nesting birds. Under all alternatives, vegetation management timing and activities would account for key life history requirements for resident and migratory birds, including identifying and minimizing incidental take. Avoiding disturbance during nesting and brood rearing periods will help to increase nesting success. Requirements for such measures, and other measures to protect wildlife to the extent practicable, would likely be included during implementation-level NEPA analysis.

New trail, road, or ROW development would impact habitat by fragmenting the landscape and reducing habitat quality for species that require large contiguous habitat patches, including some big game and special status species. Special designations are generally managed with substantial restrictions on the development of features that would reduce or fragment wildlife habitat. Under all alternatives, fence construction or reconstruction would be sited and designed to avoid creating hazards and barriers to wildlife movement.

Big game species generally inhabit large home ranges that may vary seasonally and include migration corridors and can respond with increased sensitivity to anthropogenic disturbances within portions of their range. Human presence and noise from surface-disturbing activities (e.g.,

wood harvest, road construction, ROW activities) and recreation (e.g., OHV use, camping, hiking) could result in displacement from suitable habitats, habitat fragmentation, and habitat loss. Barriers to use of migration corridors may prevent these species from reaching seasonally important crucial habitat. Under all alternatives, seasonal restrictions on surface-disturbing activities would be implemented in key big game habitat areas to reduce the potential for disturbance, which would reduce the potential for disturbance during sensitive periods. Additionally, livestock grazing and range improvements would be prohibited within the five mesa tops area identified by Proclamation 10285 for bighorn sheep. Habitat improvement projects for this species would be prioritized in this area, which would reduce the potential for transmittal of disease between domestic and bighorn sheep and competition for forage, improve habitat conditions, and ultimately benefit current and future populations.

Impacts to big game as a result of livestock grazing could include a decrease in vegetation biodiversity and density, increased competition for forage, and changes to the characteristics of the vegetation community (Olf and Ritchie 1998). Large native grazing species experience competition with livestock, may avoid areas where livestock are actively grazing, and may expend additional energy to forage in areas not suitable for livestock (Stewart et al. 2002; Garrison et al. 2016). Under all alternatives, livestock grazing would be managed to, at minimum, meet or make progress toward Utah rangeland health standards (BLM 1997) or USDA Forest Service desired conditions for rangelands, which would be expected to reduce Planning Area-wide or population-level conflicts between livestock, big game, and other wildlife species. Section 3.5.9 also discusses how livestock grazing would be managed, along with the resulting impacts under each alternative.

Many small terrestrial species are not only affected by overall habitat conditions but can be at high risk from surface-disturbing activities and vehicle traffic, whereas many larger terrestrial animals and most birds may be more able to avoid those direct risks. Amphibians, reptiles, and small mammals are generally more susceptible to vehicle mortality and ground-disturbing management activities, such as vegetation management (such as pesticide application and prescribed burning). These management actions may also directly affect pollinator habitat and insect populations.

Invasive nonnative plants can reduce habitat suitability for species dependent on native vegetation, and in some cases invasive species may result in substantial or complete conversion of a vegetation community. Extensive vegetation driven by invasive nonnative plants can result in an area becoming unsuitable for some species. Under all alternatives, agencies would coordinate with the BEC and Tribal Nations in controlling the spread of invasive nonnative plants using a variety of management techniques.

TERRESTRIAL SPECIAL STATUS SPECIES

The impacts to Utah SGCN, BLM sensitive species, USDA Forest Service SCC, USDA Forest Service MIS would be similar to those described for general wildlife species; however, because many special status species require specific habitats that may be limited within BENM, even relatively small impacts to these habitats could result in greater effects to habitat quality or quantity than general wildlife. Authorization of surface disturbance, recreation, and other types of activities may occur within critical habitat designated for ESA-listed species under all alternatives. Authorization of these activities would require consultation or coordination with the USFWS, and measures would be developed with the USFWS and designed to avoid, minimize, or mitigate impacts to the features of the critical habitat that are essential to the ESA-listed species. Table 3-49 lists the total acreages of critical habitat that overlap areas with identified uses or management decisions under each alternative.

Many goals, objectives, management directions, and allocations for special status wildlife would remain the same or similar under all alternatives and provide protection for wildlife and habitats while allowing for other discretionary uses. Management direction for all alternatives includes limiting discretionary uses to protect and recover special status species habitats and populations (including ESA-listed species). Seasonal restrictions or other protective measures would benefit special status raptor species such as northern goshawk, and ESA-listed species such as MSO, yellow-billed cuckoo, and southwestern willow flycatcher. Implementation of educational outreach, group size limits, camping restrictions, and permits to protect MSO Protected Activity Centers (PACs) would reduce the potential for human noise and disturbance of this species during breeding. At the implementation level, any surface-disturbing activities with the potential to adversely impact ESA-listed species would be coordinated with the USFWS to comply with the ESA.

In addition to species-specific management, management of other resources often has an incidental beneficial impact of protecting wildlife and special status species habitat. For example, vegetation management treatments, including prescribed burns, habitat maintenance and restoration, and removal of noxious and invasive species, have the potential to improve existing conditions, even if their primary function is not related to wildlife. These treatments could reduce soil loss, improve wildlife habitat, restore ecological function, and increase available forage. Decisions on habitat improvement methods and objectives may prioritize the creation or restoration of habitat conditions that support special status species, consistent with the agencies' special status species policies.

Under all alternatives, raptor management, at minimum, would be guided by practices identified in *Best Management Practices for Raptors and Their Associated Habitats in Utah* and the approved recovery plan for the California condor (Kiff et al. 1996) and the *Mexican Spotted Owl Recovery Plan* (USFWS 2012). At the implementation level, any surface-disturbing activities with the potential to adversely impact listed raptor species would be coordinated with the USFWS to comply with the ESA. As a result, direct impacts to listed raptor species would be unlikely to occur. The most common types of impacts to raptor species within the Planning Area would be disturbance from human presence and noise from motorized vehicles and equipment. Rock climbing and other recreational activities near cliff habitats where nesting raptors may be present may result in disturbance of nesting raptors and reduce nesting success. Under all alternatives, agencies would post or otherwise provide educational information to reduce climbing and canyoneering impacts to active raptor nests.

3.4.11.2.3. Impacts under Alternative A

Aquatic Wildlife and Fisheries Habitats

Under Alternative A, modifications to the existing management would result in increased protection of aquatic and riparian habitat within the Monument. Disturbance associated with recreational use would continue to occur, including 15,997 acres of aquatic and riparian habitat that would be located within designated SRMAs and ERMAs (see Table 3-47). Potential effects on habitats within these RMAs would be commensurate with the type of and intensity of recreation that each would be managed for: of the 15,997 acres within these areas, approximately 58% (9,274 acres) would occur within RMAs that would experience higher rates of visitation than surrounding areas (such as the Cedar Mesa, Canyon Rims, and Indian Creek SRMAs), and approximately 42% (6,693 acres) would be located in areas with anticipated low to medium rates of visitation (such as the Monticello, Beef Basin, and Dark Canyon ERMAs). Indirect effects on fish and aquatic wildlife would be greatest in recreational areas that experience high visitation (see Section 3.4.11.2.2 for more detail); however, recreational use would be limited in areas where riparian habitats is observed to

be unacceptably damaged, which would reduce the risk of long-term impacts to these habitats from recreation.

Under Alternative A, recreational activities across the Planning Area, including OHV use and dispersed camping, would remain available in riparian areas but with limited access near lakes and streams on NFS lands to minimize impacts to aquatic ecosystems, which would reduce potential risk of disturbance to habitats on NFS lands. Alternative A would not implement management restrictions related to recreational water pumping and purification, and potential effects to water resources would be disproportionately intensified in areas of high-density visitation and recreational use and during periods of drought, when the impacts to water quality and aquatic habitat would likely be concentrated. (See Section 3.4.3.2 for more detail on the impacts to water resources.) Effects on aquatic wildlife and habitat caused by recreational activities would be similar to current conditions.

Under Alternative A, 5,436 acres of riparian and aquatic habitat would be located in areas closed to OHV use, which would eliminate potential impacts to wildlife and habitat from these uses in areas closed to those activities (see Table 3-47). Approximately 13,245 acres of riparian and aquatic habitat would be located in areas where OHV use is limited to designated roads and trails and impacts to aquatic wildlife and habitats in these areas would continue (see Section 3.4.11.2.2 for more detail). The impacts to aquatic wildlife would be greatest where roads and trails would cross aquatic or riparian habitat. Per the 2008 Monticello RMP, vehicle access and mechanized travel is prohibited from Comb Wash downstream to Lime Creek and below Mexican Hat Bridge, which would continue to minimize or prevent direct impacts to riparian and aquatic habitat from disturbance associated with OHV use in this area.

Under Alternative A, surface-disturbing activities (including livestock grazing associated water developments and ROW development) would be permitted and therefore have the potential to impact fish and aquatic wildlife and habitats (see Table 3-47). Alternative A would allow livestock grazing within the greatest amount of riparian and aquatic habitat of all alternatives, where effects would be similar to current conditions (see Section 3.4.11.2.2 for more detail). Alternative A would continue to allow for the maintenance and installation of precipitation catchments and the development of springs in areas that lack proper water distribution or natural water sources, thereby improving or creating water availability for wildlife and livestock outside of riparian habitat, which would likely improve water quality and aquatic and riparian habitats by reducing surface impacts such as erosion and soil compaction.

Sensitive riparian areas such as Arch Canyon and Comb Wash would be unavailable/not suitable to livestock grazing, which would reduce potential effects on riparian and aquatic habitats in those areas. In addition, grazing leases or permits that are voluntarily relinquished would be retired, which would eliminate impacts from livestock grazing in the long-term if such relinquishments occur. Similarly, Alternative A would allow for ROW development within the greatest amount of riparian and aquatic habitat of all alternatives, and the least amount of habitat within which ROW development would be avoided or excluded (see Table 3-47). In areas where ROW development would be allowed, and to a lesser extent in areas that would be avoided, the risk of effects to riparian and aquatic habitat would be increased (see Section 3.4.11.2.2 for more detail).

Under Alternative A, allowable vegetation management actions would allow for use of the greatest variety of available methods, including chaining, and across the greatest potential area of the Monument, which could result in an increased risk of temporary indirect impacts from upland surface disturbance to riparian and aquatic habitats; however, because vegetation management actions would be conducted to protect BENM objects, these actions are anticipated to improve habitat conditions within the Monument. Vegetation treatments to reduce woody and herbaceous

invasive species in riparian areas would result in similar effects as the upland vegetation treatments; however, both the temporary and long-term effects would directly impact riparian and aquatic habitats. Alternative A would allow for the greatest degree of potential surface-disturbing activities of all alternatives, which would result in the greatest potential for direct and indirect impacts to aquatic wildlife and habitats.

Table 3-47. Riparian and Aquatic Habitat Within Land Use Allocations and Recreation Management Areas by Alternative

	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Alternative D (acres)	Alternative E (acres)
Riparian and aquatic habitat within MAs	15,997	9,604	9,604	7,981	18,727
Riparian and aquatic habitat within OHV closed areas	5,436	7,440	8,318	12,264	7,502
Riparian and aquatic habitat within OHV limited areas	13,245	11,240	10,363	6416	11,178
Riparian and aquatic habitat within areas available for livestock grazing*	16,018	15,481	15,481	12,135	15,481
Riparian and aquatic habitat within areas unavailable for livestock grazing	2,372	2,880	2,880	5,668	2,880
Riparian and aquatic habitat within areas available for ROW development	9,651	141	0	0	0
Riparian and aquatic habitat within areas where for ROW development would be avoided	3,708	13,172	12,364	8,442	3,489
Riparian and aquatic habitat within areas where ROW development would be excluded	5,319	5,365	6,314	10,237	14,470

* These calculations do not include areas where grazing management is categorized as "trailing only," "trailing or emergency," or areas where data are unavailable.

Under Alternative A, riparian and aquatic habitats located within special designations (such as designated wilderness, LWC, WSAs, ACECs, and RNAs) would be protected from disturbance and degradation associated with impacts from surface-disturbing activities (such as ROW development), and generally experience a lower level of other potentially disturbing activities (such as recreation).

AQUATIC SPECIAL STATUS SPECIES

Under Alternative A, BLM and USDA Forest Service sensitive species, MIS, SCC, and Utah SGCN aquatic species and habitat would continue to be managed in a manner that promotes and restores riparian habitat; preserves hydrologic connectivity; and maintains, enhances, or restores habitat quality and quantity in order to provide for biologically diverse and healthy ecosystems. Impacts under this alternative similar to those described above for non-special status aquatic wildlife and fish could occur; however, management under this alternative specifically seeks to minimize impacts on special status species. As a result, impacts to special status aquatic wildlife would be minimized, and management actions such as land acquisition, maintenance of instream flows, and removal of habitat barriers would be prioritized. These actions serve to increase aquatic habitat connectivity and availability, which would indirectly improve species population viability. The impacts to special status species would generally be the same as non-listed species described under this alternative.

Under Alternative A, ESA-listed fish species would continue to be managed under the guidance of the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin

Recovery Implementation Program. Such programs serve to recover the listed razorback sucker and Colorado pikeminnow by identifying and fulfilling the delisting criteria for these species (USFWS 2002a, 2002b). Under Alternative A, the greatest amount of designated critical habitat among all alternatives would be located within recreational areas, areas available for ROW development, OHV use, and livestock grazing (see Table 3-47). These discretionary actions and land uses have the potential to cause impacts to water quality or other components of ESA-listed fish habitat, as described in Section 3.4.11.2.2. Authorization of discretionary activities within critical habitat or actions outside of critical habitat that may affect ESA-listed fish species would require consultation with the USFWS and development of measures designed to avoid, minimize, or mitigate impacts to the species and their critical habitat.

Table 3-48. Acres of Listed Fish Species Critical Habitat within Land Use Allocations and Recreation Management Areas by Alternative

	Alternative A (acres)	Alternative A (acres)	Alternative B (acres)	Alternative B (acres)	Alternative C (acres)	Alternative C (acres)	Alternative D (acres)	Alternative D (acres)	Alternative E (acres)	Alternative E (acres)
	Colorado Pikeminnow	Razorback Sucker	Colorado Pikeminnow	Razorback Sucker	Colorado Pikeminnow	Razorback Sucker	Colorado Pikeminnow	Razorback Sucker	Colorado Pikeminnow	Razorback Sucker
Critical habitat within MAs	649	649	513	513	513	513	510	510	578	578
Critical habitat within OHV closed areas	227	227	227	227	227	227	227	227	227	227
Critical habitat within OHV limited areas	350	350	350	350	350	350	350	350	350	350
Critical habitat within areas available for livestock grazing	575	575	417	417	417	417	417	417	270	270
Critical habitat within areas unavailable for livestock grazing	0	0	158	158	158	158	158	158	158	158
Critical habitat within areas available for ROW development	257	257	0	0	0	0	0	0	0	0
Critical habitat within areas where ROW development would be avoided	249	249	524	524	466	466	306	306	4	4
Critical habitat within areas where ROW development would be excluded	69	69	50	50	109	109	268	268	571	571

Terrestrial Wildlife Habitats

Under Alternative A, existing management decisions and activities would be maintained unless modifying those actions is required to protect BENM objects; therefore, current trends and impacts to terrestrial wildlife and habitat, including special status species, would likely continue. Alternative A would allow for maximum use and emphasize management flexibility. Habitat management would be provided to maintain or improve habitat and habitat diversity for existing wildlife species, and impacts to wildlife and wildlife habitats would be expected to be similar to current conditions.

Special designations are similar under Alternatives A, B, and C, with the exception that the San Juan River and Shay Canyon ACECs are carried forward only under Alternative A. Under Alternative A, lands subject to protective special designations and identified LWC would limit certain types of disturbance to wildlife, such as surface disturbance and presence of construction or maintenance workers due to ROW projects (see Section 3.4.11.2.2 for detailed discussion of these impacts), including within the San Juan River and Shay Canyon ACECs.

Alternative A has the smallest acreage of ROW exclusion areas and the greatest acreage of areas open to ROW authorization. Because ROW development would result in surface disturbance, loss of habitat, disturbance associated with human presence and noise generation, and potentially create linear features that can form barriers to wildlife movement and habitat connectivity, those impacts are likely to occur to the greatest extent under Alternative A.

Recreational use would likely continue to increase within the Planning Area, which would commensurately increase the potential for impacts to wildlife and habitat. As described in Section 3.4.11.2.2, impacts to terrestrial wildlife would largely be associated with disturbance associated with human noise and activity from recreation, which is anticipated to increase over time. This alternative would generally allow more intense recreational uses (i.e., larger groups, more permitted events, and fewer restrictions) than other alternatives. Increased recreational use and intensity would be anticipated to have greater risk of disturbance on all wildlife species and habitats. Potential impacts to wildlife and habitat within RMAs would be commensurate with the type and intensity of recreation for which each would be managed.

Management of SRMAs and ERMAs under Alternative A would continue existing management direction. Indirect impacts to wildlife and habitat would be greatest in recreational areas that experience high visitation, where there is a greater risk of direct impacts to habitat quality from surface disturbance associated with dispersed camping and other anthropogenic uses, and greater risk of disturbance of wildlife due to human noise and activity. For example, the Comb Ridge RMZ, which overlaps with habitat for *Eucosma navajoensis*, would likely continue to experience high visitation rates, leading to potentially greater disturbance to this species' habitat. Restrictions on recreational activity near sensitive sites can address potential disturbance and displacement of wildlife. Alternative A includes a prohibition on dispersed camping within 200 feet of springs and other water sources. Similarly, the closure of areas to OHV use would reduce the potential disturbance to wildlife and habitat, whereas permitting OHV use on existing roads and trails would continue to contribute to disturbance of wildlife in those areas. Alternative A has the greatest area designated as OHV limited, and the smallest area designated as OHV closed.

Under Alternative A, habitat requirements for deer and elk would be managed to minimize disturbance and maintain forage areas, hiding cover, and migration routes. Special conditions for all game species in crucial habitat can include restrictions on OHV use, low-flying aircraft, and noise-generating activities. Additionally, special conditions would be implemented in bighorn sheep lambing and rutting areas, which would benefit the species by reducing the potential for disturbance during sensitive periods. Maintaining and/or improving big game habitats within the

Planning Area would maintain or improve habitat conditions for big game, which would benefit current and future populations.

Lands would be available for grazing to the greatest extent and with the fewest restrictions under Alternative A, and Alternative A includes the lowest acreage of lands unavailable for grazing. Although all alternatives include requirements to manage grazing for ecosystem health and to minimize wildlife-livestock competition and conflict, impacts of grazing would be anticipated to occur to the greatest extent under Alternative A. Grazing leases or permits that are voluntarily relinquished would be retired, which would eliminate impacts to big game habitat and other wildlife from livestock grazing in the long-term if such relinquishments occur.

Alternative A allows for the introduction, transplantation, augmentation, and re-establishment of both native and naturalized (nonnative) species, in coordination with UDWR and subject to case-specific NEPA analysis. These actions would benefit the populations of the target species, and when carried out for the benefit of native species, would contribute toward maintaining or restoring ecosystem health. Nonnative terrestrial species that may be managed in this way include upland game species such as chukar (*Alectoris chukar*).

TERRESTRIAL SPECIAL STATUS SPECIES

Under Alternative A, management actions regarding BLM and USDA Forest Service sensitive species, MIS, SCC and Utah SGCN wildlife and habitats would be similar to those described in Section 3.4.11.2.2. Implementation of existing conservation strategies to protect and restore habitats and populations (including coordinating with UDWR to implement measures described in the Utah Wildlife Action Plan), protections for bat habitat, and supporting translocations of special status species into the Planning Area would benefit existing and future populations of these species. Continued monitoring and inventories for special status species would also inform implementation of future habitat improvement efforts and establishment of seasonal restrictions to protect special status species from disturbance during sensitive periods. Seasonal restrictions and public education efforts regarding raptors would be similar to that discussed in Section 3.4.11.2.2.

Under Alternative A, management for ESA-listed wildlife and habitats (including critical habitats) would be similar to that discussed above for non-ESA-listed special status species and in Section 3.4.11.2.2. Similar to that discussed for aquatic critical habitats, potential impacts to terrestrial wildlife critical habitat within RMAs would be commensurate with the type and intensity of recreation for which each would be managed: of the 385,764 acres within these areas, 354,950 acres would occur within RMAs that would experience higher rates of visitation than surrounding areas, and 30,815 acres would be located in areas with anticipated low to medium rates of visitation. Implementation of guidelines outlined in species recovery or conservation plans and implementation of recreation management actions, such as seasonal limitations on motorized access into Arch Canyon to protect MSO from disturbance and prohibition of commercial overnight use in PACs during the breeding season, would result in a decreased potential for recreation-related disturbance during sensitive periods. Alternative A includes the highest acreage of critical habitat for MSO where ROW development may be available, and the lowest acreage of critical habitat for MSO where ROW development is avoided or excluded, resulting in the highest potential among all alternatives for impacts to MSO critical habitat as a result of ROW development.

Table 3-49. Acres of Listed Terrestrial Species Critical Habitat within Land Use Allocations and Recreation Management Areas by Alternative

	Alternative A (acres) MSO	Alternative A (acres) Southwestern Willow Flycatcher	Alternative B (acres) MSO	Alternative B (acres) Southwestern Willow Flycatcher	Alternative C (acres) MSO	Alternative C (acres) Southwestern Willow Flycatcher	Alternative D (acres) MSO	Alternative D (acres) Southwestern Willow Flycatcher	Alternative E (acres) MSO	Alternative E (acres) Southwestern Willow Flycatcher
Critical habitat within MAs	384,615	1,149	169,132	794	169,132	794	107,842	794	556,505	848
Critical habitat within OHV closed areas	160,190	124	238,976	124	254,201	124	399,836	124	242,052	124
Critical habitat within OHV limited areas	396,017	723	317,237	723	302,012	723	156,375	723	314,162	723
Critical habitat within areas available for livestock grazing	469,462	846	448,449	846	448,449	846	370,816	846	448,449	846
Critical habitat within areas unavailable for livestock grazing	83,644	0	104,656	0	104,656	0	175,049	0	104,656	0
Critical habitat within areas available for ROW development	345,560	0	2,331	0	0	0	0	0	0	0
Critical habitat within areas where ROW development would be avoided	56,011	717	395,188	846	380,786	846	236,989	723	158,628	2
Critical habitat within areas where ROW development would be excluded	154,576	129	158,628	0	175,360	0	319,176	123	397,531	844

3.4.11.2.4. Impacts under Alternative B

Aquatic Wildlife and Fisheries Habitats

Under Alternative B, an emphasis on direct and prescriptive management to protect BENM objects, including prescriptive controls (e.g., group size limitations) would result in increased protection of riparian and aquatic wildlife and habitats when compared to Alternative A.

Disturbance associated with recreational use would continue to occur, including within a reduced area of aquatic and riparian habitat that would be located within designated SRMAs and ERMAs (see Table 3-47). Potential effects to habitats within these RMAs would be commensurate with the type of and intensity of recreation that each would be managed for (see Section 3.4.11.2.2 for more detail), with higher intensity use anticipated in the Indian Creek SRMA, the Arch Canyon RMZ in the Cedar Mesa SRMA, and the Sand Island RMZ in the San Juan River SRMA. Implementation of stricter permit requirements, such as a reduction in the number of vehicles or people that would require a permit and implementation of additional restrictions on dispersed camping would reduce the risk of recreational use-related effects and/or intensity of impacts to riparian and aquatic habitats and wildlife when compared to Alternative A. Similar to Alternative A, Alternative B would not place restrictions on water pumping for recreational activities, and effects on aquatic wildlife and habitat from pumping would be the same as described for Alternative A.

Alternative B would continue to allow livestock grazing (including new water developments) and OHV use, though these activities would have the potential to occur in a reduced area within riparian and aquatic habitats compared to Alternative A (see Table 3-47). Sensitive riparian areas such as Arch Canyon and Comb Wash would continue to be unavailable/not suitable for livestock grazing, and similarly, grazing leases or permits that are voluntarily relinquished would be retired, as described in Alternative A; however, under Alternative B, if a commonly held lease or permit holder relinquishes a permit or lease, the animal unit months (AUMs) for each area would be commensurately reduced, which would result in an incremental reduction in potential impacts to riparian and aquatic habitats within the allotment. Under Alternative B, riparian and aquatic habitat available for ROW development is reduced compared to Alternative A (see Table 3-47) because areas available for ROW development would be limited to areas along existing highways and other corridors, and the remainder of the Monument not already excluded from ROW development would be a ROW avoidance area. The reduction of areas available for ROW development would reduce potential impacts to aquatic wildlife and their habitats from those described under Alternative A.

Vegetation management actions would be the same as those described for Alternative A; however, prioritization of treatment areas would be identified in collaboration with the BEC, Traditional Indigenous Knowledge would be incorporated into management actions, and methods of treatment in WSAs and wilderness areas would be “light on the land.” As a result, the risk of temporary indirect impacts from upland surface disturbance to riparian and aquatic habitats would be reduced from those described in Alternative A, and potential improvements in habitat conditions would be similar. Vegetation treatments to reduce woody and herbaceous invasive species in riparian areas would result in similar effects as the upland vegetation treatments; however, both the temporary and long-term effects would directly impact riparian and aquatic habitats. Alternative B would result in a reduction in potential surface-disturbing activities compared to Alternative A, which would reduce direct and indirect impacts to aquatic wildlife and habitats.

Under Alternative B, the overall area of special designations would be reduced from Alternative A, because three ACECs would not be designated within the Monument. Riparian and aquatic habitats located within these areas would not be protected through ACEC designation from disturbance and degradation associated with impacts from surface-disturbing activities (such as ROW development);

however, because the overall area within the Monument that would be available for such surface-disturbing activities would be reduced from Alternative A, impacts to these areas that would no longer be within ACECs are not anticipated to occur.

AQUATIC SPECIAL STATUS SPECIES

Under Alternative B, management of and potential effects on BLM and USDA Forest Service sensitive species, MIS, SCC, and Utah SGCN aquatic species would be similar to those described for general aquatic wildlife under this alternative. Increased limitations on group sizes and designated camping areas in highly visited areas such as the Arch Canyon RMZ and the San Juan River SRMA, would result in reduced effects on bluehead and flannelmouth suckers when compared to Alternative A. Impacts on other special status species would also be generally reduced as a result of visitor use restrictions. Impacts to special status species and habitats would be greatest in areas of high visitation or where other surface-disturbing activities may occur.

Under Alternative B, the area of designated critical habitat for the razorback sucker and Colorado pikeminnow located within recreational areas, areas available for ROW development, OHV use, and areas available for livestock grazing would be reduced compared to Alternative A (see Table 3-48). As a result, potential impacts to razorback sucker and Colorado pikeminnow populations and designated critical habitat would be commensurately reduced. Management of and impacts to federally listed fish species would be consistent with the impacts described for all alternatives. In addition, as described in Section 3.4.11.2.2, authorization of discretionary activities within critical habitat or actions outside of critical habitat that may affect ESA-listed fish species would require consultation with the USFWS and development of measures designed to avoid, minimize, or mitigate impacts to the species and their critical habitat.

Terrestrial Wildlife Habitats

Under all alternatives, management of resources would be carried out to protect the values within BENM. Because Alternative B generally carries more restrictions on activities that could result in impacts to wildlife and their habitat than under Alternative A, Alternative B is likely to achieve more protection of terrestrial wildlife habitats overall.

Alternative B would apply a more prescriptive management direction than Alternative A for recreational uses, areas, and facilities and limit recreational uses outside of designated areas. Therefore, the impacts to terrestrial wildlife habitat would also be likely to be concentrated where management actions allow for more intensive recreational use. Greater recreational restrictions to highly visited management areas such as Comb Ridge RMZ would benefit endemic species such as *Eucosma navajoensis*. Concentrating recreation in designated areas allows wildlife to remain relatively undisturbed outside of those areas. Under this alternative, wilderness areas, WSAs, and IRAs would continue to be managed for preservation, and therefore, impacts to terrestrial habitat in these locations would be likely the same as Alternative A.

Under Alternative B, special designations would be the same as under Alternative A, except that the San Juan River and Shay Canyon ACECs would not be carried forward. Alternative B manages more of the Planning Area as LWC than Alternative A. This management would limit impacts from OHV recreation and other mechanized uses within terrestrial wildlife habitat, although OHV use may be allowed if it does not impact wilderness characteristics. Decreased use of OHVs and other mechanized equipment in the Monument would decrease impacts to wildlife related to noise generation, vehicle mortality, and avoidance of human activity. Alternative B has a similar total acreage of ROW exclusion areas compared to Alternative A, but nearly all areas identified as open for ROW authorization under Alternative A are identified as ROW avoidance areas under Alternative

B. With all of these additional restrictions on certain types of activities that can directly disturb wildlife and reduce or fragment habitat, Alternative B would have lower potential impact to wildlife species from human activity, noise generation, and the risk of vehicle mortality compared to Alternative A.

Management actions for big game species would be similar to those described for Alternative A, but with a greater focus on collaboration with the State of Utah and BEC. Additional restrictions on noise-generating activities in sensitive areas and during sensitive seasons would be implemented under Alternative B. Management for bighorn sheep would be the same as for Alternative A. Any future proposal for a change in the kind of livestock (e.g., from cattle to sheep) would be evaluated based on the best available science. Proposals in crucial desert bighorn sheep habitat would be denied, reducing competition for forage and the potential transmission of disease from domestic to wild sheep. These management actions and restrictions are likely to result in benefits to game species relative to Alternative A.

The acreage of land available for grazing under Alternative B is lower than under Alternative A, and some sensitive riparian areas have been set aside for trailing only, which would reduce grazing impacts in those locations. Furthermore, Traditional Indigenous Knowledge would be incorporated into the fencing design, location, and seasonal restrictions associated with grazing.

Alternative B differs from Alternative A by allowing the introduction, translocation, augmentation, and re-establishment of native species, but not nonnative species. Although Alternative A did not include management for many nonnative terrestrial species, managing for native species under Alternative B would benefit overall native ecosystem health to a greater degree than Alternative A.

TERRESTRIAL SPECIAL STATUS SPECIES

Under Alternative B, management of habitat for special status species conservation would incorporate Tribal and Utah statewide conservation strategies with UDWR and the USFWS, to protect habitat connectivity. Unrestricted movement between seasonal use areas and ecological zones are important for sustainable populations. This would likely improve connectivity relative to Alternative A.

When developing pre-activity monitoring requirements and seasonal restrictions for special status species such as bats or species important for Indigenous peoples' traditional uses and ceremonies, agencies would collaborate with the BEC. Projects with the potential to impact these species would be designed to avoid impacts to these species and/or to achieve no net loss to species and their habitats. This would result in fewer impacts to these species relative to Alternative A.

In Alternative B, critical habitat for MSOs overlaps with the following RMAs in the Planning Area: Beef Basin ERMA, Canyon Rims SRMA, Cedar Mesa ERMA, Dark Canyon ERMA, Indian Creek SRMA, and White Canyon ERMA. Critical habitat for MSOs overlaps with the following RMZs in the Planning Area: Arch Canyon, Cedar Mesa Backpacking, Comb Ridge, Dark Canyon Backpacking, Fable Valley, Indian Creek Corridor, Trail of the Ancients, and White Canyon Canyoneering. Casual overnight use of MSO nesting areas would not be encouraged, and commercial overnight use of MSO PACs would be prohibited from March 1 to August 31. Visitor limitations and seasonal closure would likely benefit MSOs and their habitat. This alternative would have a lesser impact to MSOs than Alternative A because of increased limitations on access to MSO habitat.

In Alternative B, critical habitat for southwestern willow flycatcher overlaps with the San Juan River SRMA, San Juan Hill RMZ, and Sand Island RMZ. Under Alternative B, fewer acres of critical habitat would be located within SRMAs and ERMAs relative to Alternative A, and the extent of potential

impacts to critical habitat from visitor use and recreational disturbance is likely to be the same or lower under Alternative B. Fewer recreational developments within these management areas could potentially mean less visitor use and disturbance; however, it would also mean less management and fewer regulations. In general, greater management is beneficial for the species because the greatest threats to the species' critical habitat are large-scale habitat disturbance and changes rather than impacts from individual visitor use. Alternative B also includes an increase in acres of critical habitat where ROW development would be avoided as compared to Alternative A (see Table 3-49). Therefore, Alternative B would reduce the potential for surface disturbances to critical habitat and likely benefit the species.

Raptor management under Alternative B would include temporary closures of OHV routes, trails, and climbing routes where active nests are located. Agencies would collaborate with the BEC when determining seasonally restricted activities that impact roosting, hibernating, and breeding habitats. Agencies would collaborate with the BEC and Tribal Nations when closing active raptor nesting areas, including the temporary closure of OHV route access to nesting areas, and the closure of trails and climbing routes where active nests could be located. Closing areas involving nesting raptor species decreases the chances of nest failure and could increase raptor populations. Under Alternative B, educational outreach would be developed in collaboration with the BEC.

3.4.11.2.5. Impacts under Alternative C

Aquatic Wildlife and Fisheries Habitats

Under Alternative C, an emphasis on indirect and prescriptive management to protect BENM objects, including implementation of additional controls (such as an increased emphasis on permits) and allowance of discretionary uses only as needed for protection of Monument objects, would result in increased protection of riparian and aquatic wildlife and habitats when compared to Alternatives A and B.

Disturbance associated with recreational use would continue to occur, including within a reduced area of aquatic and riparian habitat that would be located within designated SRMAs and ERMA (see Table 3-47). Potential effects to habitats within these RMAs would be commensurate with the type and intensity of recreation that for which each would be managed (see Section 3.4.11.2.2 for more detail), with higher intensity use anticipated in the Indian Creek Corridor RMZ (in the Indian Creek SRMA), the Sand Island and San Juan Hill RMZs in the San Juan River SRMA, and the Arch Canyon RMZ in Cedar Mesa SRMA. Other recreational areas that are managed for more primitive and backcountry activities such as the White Canyon, Dark Canyon, and Beef Basin ERMA would likely result in minimal impacts to aquatic wildlife and fisheries. Under Alternative C, more flexibility in management actions (such as area closures and limitation of interpretive sites to designated cultural sites) to protect and prevent disturbance to Monument objects would result in further reduction of the risk of recreational use-related effects and/or intensity of impacts to riparian and aquatic habitats and wildlife when compared to Alternatives A and B. Alternative C would place restrictions on water pumping for recreational activities conducted under a SRP, which would result in a reduced risk of effects on aquatic wildlife and habitat; however, similar to Alternative B, no restrictions on pumping would be applied to general recreational use. See Section 3.4.3.2 for more detail. As a result, effects on aquatic wildlife and habitat from pumping would be slightly reduced from those described for Alternatives A and B.

Alternative C would continue to allow livestock grazing across the same areas as Alternative B (see Table 3-47); however, no new range improvements (including water developments) would be permitted unless the primary purpose is shown to protect, restore, and/or increase the resiliency of aquatic wildlife and their habitat. This would result in a reduced risk of disturbance and/or change

in water availability for aquatic wildlife and riparian and aquatic habitats within the Monument, though existing impacts would continue to occur. Additionally, trailing of livestock along riparian areas would be avoided, which would further protect riparian and aquatic habitats from disturbance within the Monument. Under Alternative C, OHV use would be reduced in areas of riparian and aquatic habitats (see Table 3-47), which would reduce the risk of disturbance and/or direct impacts to aquatic wildlife and habitats when compared to Alternatives A and B. Under Alternative C, riparian and aquatic habitat available for ROW development is reduced compared to Alternatives A and B (see Table 3-47), because no areas within the Monument would be available for ROW development, and the remainder of the Monument not already excluded from ROW development would be a ROW avoidance area. The reduction of areas available for ROW development would reduce potential impacts to aquatic wildlife and their habitats from those described under Alternatives A and B.

Vegetation management would be with the same as Alternative B, with the exception that the use of chaining for vegetation removal would be prohibited, which would reduce the risk of temporary indirect impacts from upland surface disturbance to riparian and aquatic habitats. Alternative C would also exclude the use of mechanized or motorized equipment and structural development within riparian areas and floodplains unless to protect BENM objects, thereby reducing surface-disturbing impacts in riparian and aquatic habitat areas when compared to Alternatives A and B. Alternative C would result in a reduction in potential surface-disturbing activities compared to Alternatives A and B, which would reduce direct and indirect impacts to aquatic wildlife and habitats.

The effects of management of special designations on riparian and aquatic habitats would be the same as those described for Alternative B.

AQUATIC SPECIAL STATUS SPECIES

Under Alternative C, management and potential effects on BLM and USDA Forest Service sensitive species, MIS, SCC, and Utah SGCN aquatic species would be similar to those described for general aquatic wildlife under this alternative. Although potential impacts to special status species and habitats may occur, enforcement of permit systems and group size limitations in highly visited recreational areas such as the Indian Creek Corridor RMZ in the Indian Creek SRMA, the Sand Island and San Juan Hill RMZs in the San Juan River SRMA, and the Arch Canyon RMZ in the Cedar Mesa SRMA would result in greater management control and result in fewer impacts to sensitive fish species such as bluehead and flannelmouth suckers. Impacts to special status species and habitats would be greatest in areas of high visitation or where other surface-disturbing activities may occur.

Under Alternative C, the area of designated critical habitat for the razorback sucker and Colorado pikeminnow located within areas where ROW development would be available and/or avoided would be reduced compared to Alternative B. This area would also be further reduced in recreational areas, areas available for ROW development, OHV use, and areas available for livestock grazing compared to Alternative A (see Table 3-48). As a result, potential impacts to razorback sucker and Colorado pikeminnow populations and designated critical habitat would be commensurately reduced. Management of and impacts to federally listed fish species would be consistent with the impacts described for all alternatives. In addition, as described in Section 3.4.11.2.2, authorization of discretionary activities within critical habitat or actions outside of critical habitat that may affect ESA-listed fish species would require consultation with the USFWS and development of measures designed to avoid, minimize, or mitigate impacts to the species and their critical habitat.

Terrestrial Wildlife Habitats

Alternative C would emphasize the protection of intact and resilient landscapes while allowing discretionary uses in identified RMZs. This alternative would provide for more developed forms of recreation in the frontcountry and more primitive forms of recreation in the backcountry. RMZs under Alternative C would likely allow for decreased impacts to habitat in remote areas and other locations with low visitation rates, through implementation of permit systems, group size, and visitation limits, and would likely have similar or increased impacts to areas with high visitation rates as compared to Alternative A. Under Alternative C, management of high visitation areas such as Comb Ridge RMZ would be similar to Alternative B; therefore, the impacts to *Eucosma navajoensis* would also be similar. Restrictions on camping near water sources would be the same as Alternative B.

In general, Alternative C would result in less potential for surface disturbance and recreational opportunities than Alternative A and include more management actions addressing potential impacts to wildlife and the proper care and management of relevant Monument objects. Special designations are the same under Alternative C as under Alternative B. ROW exclusion areas and OHV closure areas are greater under Alternative C, further decreasing potential disturbance associated with human presence, noise generation, and vehicle use from those activities, and decreasing potential surface disturbance and barriers to wildlife movement resulting from ROW development.

Most management actions related to game species under Alternative C are the same as those under Alternative B. All acres of land managed to allow or exclude grazing are the same under Alternatives B and C, but development of new water catchments would not be allowed unless necessary to protect BENM objects. Compared to Alternatives A and B, Alternative C would carry additional restrictions on pumping and consumptive water use that could affect aquatic sites, which may be especially critical to wildlife during drought conditions. The additional protections extended to aquatic sites would be anticipated to benefit wildlife to a greater degree than Alternative A. Reintroducing native species would be managed the same as under Alternative B.

TERRESTRIAL SPECIAL STATUS SPECIES

Under Alternative C, management actions directed toward special status species and general impacts to special status wildlife and habitat would be like those described in Alternative B. In Alternative C, critical habitat for MSO and southwestern willow flycatcher overlaps the same RMAs and RMZs as described in Alternative B. Alternative C also has the same acres of critical habitat overlapping with ROW avoidance areas. Therefore, the impacts to these species and their critical habitats are expected to be similar to Alternative B. The addition of a permit system or greater restrictions on permits and group sizes in highly visited recreational areas within the Monument would benefit special status species by having greater management control in these areas. Greater management control could lead to less disturbance to wildlife in response to evidence of impacts associated with recreational activities, reducing the extent, frequency, and/or intensity of impacts described in Section 3.4.11.2.2.

Under Alternative C, no MSO critical habitat is within areas where ROW development may be allowed, and a greater acreage of critical habitat is within areas where ROW development is avoided or excluded relative to Alternatives A and B. Other species-specific special status species, bat roost, MSO, and raptor management and management related to reintroductions or translocations of native species is the same as Alternative B.

3.4.11.2.6. Impacts under Alternative D

Aquatic Wildlife and Fisheries Habitats

Under Alternative D, management actions would prioritize natural processes and emphasize natural conditions by limiting discretionary actions, which would result in an overall reduction in potential disturbance to riparian and aquatic wildlife and habitats when compared to Alternatives A, B, and C; however, limitation on restoration and rehabilitation activities may result in long-term effects on aquatic and riparian habitats that are currently in degraded condition.

Disturbance associated with recreational use would continue to occur, including within a reduced area of aquatic and riparian habitat that would be located within designated MAs (see Table 3-47). Potential effects on habitats within these MAs would be commensurate with the type and intensity of recreation for which each would be managed (see Section 3.4.11.2.2 for more detail). Under Alternative D, active management of recreation would be greatly reduced when compared to Alternatives A, B, and C, with a focus on general limitation of uses and activities and development of recreational infrastructure limited to that necessary to protect Monument objects. Requirements such as carrying all solid human waste out of areas without facilities, prohibition of dispersed camping within 0.25 mile of springs and water improvements, and swimming in in-canyon stream and pool habitats would result in a reduced risk of contamination and potential for disturbance of riparian and aquatic habitats. Restrictions on pumping would be the same as those described for Alternative C. See Section 3.4.3.2 for more detail. Overall, these prohibitions on use of aquatic habitats would result in further reduction of the risk of recreational use-related effects on and/or intensity of impacts to riparian and aquatic habitats and wildlife when compared to Alternatives A, B, and C.

Alternative D would continue to allow livestock grazing and OHV use, though these activities would occur in a reduced area within riparian and aquatic habitats compared to Alternatives A, B, and C (see Table 3-47). As under Alternative C, new water developments and trailing along the length of riparian areas would be prohibited; however, under Alternative D, modifications to existing water developments would also be prohibited unless the primary purpose is shown to protect, restore, and/or increase the resiliency of aquatic wildlife and their habitat, which would further protect riparian and aquatic habitats within the Monument. Similarly, the further reduction of riparian and aquatic habitats within areas where OHV use would occur would reduce the potential risk of disturbance to these habitats when compared to Alternatives A, B, and C. As with Alternative C, no areas within the Monument would be available for ROW development, and the remainder of the Monument not already excluded from ROW development would be a ROW avoidance area. Under Alternative D, riparian and aquatic habitat within ROW exclusion areas would be greater than under Alternatives A, B, and C, which would result in further reductions in the risk for disturbance of aquatic wildlife and their habitats.

Under Alternative D, vegetation management would emphasize a more passive vegetation management approach and restoration actions would rely on natural vegetation recruitment, and light-on-the-land vegetation management techniques would be implemented throughout the entire Monument. Although these actions would be less likely to result in temporary, indirect effects to riparian and aquatic habitats than more active management approaches, passive techniques may be less likely to achieve desirable habitat conditions for existing degraded habitats in the short term. Alternative D would result in a reduction in potential surface-disturbing activities compared to Alternatives A, B, and C, which would reduce direct and indirect impacts to aquatic wildlife and habitats.

The effects of management of special designations on riparian and aquatic habitats would be similar to those described for Alternative C; however, two additional ACECs would be designated under Alternative D, which could result in additional management protections for riparian and aquatic habitats within the boundaries.

AQUATIC SPECIAL STATUS SPECIES

Under Alternative D, management and potential effects on BLM and USDA Forest Service sensitive species, MIS, SCC, and Utah SGCN aquatic species would be similar to those described for general aquatic wildlife under this alternative. Although potential impacts to special status species and habitats may occur, implementation of prohibitions on recreational activities within and adjacent to riparian and aquatic habitats would result in fewer impacts to sensitive fish species such as bluehead and flannelmouth suckers. Impacts to special status species and habitats would be greatest in areas of high visitation or where other surface-disturbing activities may occur.

Under Alternative D, the area of designated critical habitat for the razorback sucker and Colorado pikeminnow would be the same as Alternative C (see Table 3-48). Management of and impacts to federally listed fish species would be consistent with the impacts described for all alternatives.

Terrestrial Wildlife Habitats

Alternative D would support the continuation of natural processes by limiting discretionary uses and constraining management actions to emphasize natural conditions. The alternative would limit the intensity and density of recreational areas and uses and prioritize the restoration and protection of terrestrial resources. Recreational use and surface disturbance activities such as OHV use and livestock grazing activities would be limited to specific areas throughout BENM. Alternative D has the greatest area closed to OHV use of any alternative. Under Alternative D, some areas identified under Alternative C as ROW avoidance areas are identified as ROW exclusion areas, and Alternative D has a greater acreage of ROW exclusion areas than Alternative A, B, or C. These management decisions would result in greater protection of wildlife from human presence, noise generation, and vehicle use from those activities. Alternative D would also decrease potential surface disturbance and barriers to wildlife movement resulting from ROW development compared to Alternatives A, B, or C.

Alternative D includes the most acres managed under special designations of all alternatives. The 1,012,371-acre Aquifer Protection ACEC would encompass nearly all portions of BENM that are not already within a special designation. Special designations under Alternative D are similar to those under Alternative B, with the addition of the Aquifer Protection ACEC and John's Canyon Paleontological ACEC. Special designations under Alternative D would provide a higher level of protection to wildlife habitat through those designations than Alternatives A, B, or C.

Permit systems for recreation would be used to the highest degree under Alternative D compared to all other alternatives, allowing for a management response to address potential recreation-related impacts to wildlife. Under Alternative D, Comb Ridge MZ would be managed for predominantly backcountry physical and social recreation settings and, therefore, would have the least impact to *Eucosma navajoensis* compared to all other alternatives. Portions of the moth's habitat would be within the proposed Aquifer Protection ACEC. Alternative D includes a prohibition on camping within 0.25 mile of springs and similar water sources, which would minimize potential disturbance to wildlife around those critical sites to a greater extent relative to the smaller buffer implemented for Alternatives A, B, and C.

Alternative D has the lowest area available for livestock grazing of any alternative, with other limitations on grazing such as the greatest area of any alternative open to trailing only. Alternative D would allow the maintenance of existing water catchments but would not allow the installation of additional water catchments unless necessary to protect BENM objects. This management approach would preserve natural conditions but would potentially result in fewer water sources available for wildlife, particularly during drought conditions. Because climate change has already resulted in increasing temperature and greater unpredictability in rainfall patterns in the region, provision of supplemental water sources could be necessary to protect BENM objects in some cases.

As discussed under Aquatic Wildlife and Fisheries Habitats, vegetation management would emphasize a more passive vegetation management approach. This management approach may at times result in a longer period required to achieve desired conditions after disturbance, which can result in a temporary reduction in the quality and productivity of vegetation beneficial to native wildlife. Management of game species would be the same as Alternative B. Management for desert bighorn sheep would follow guidelines set by Alternatives A and B. Reintroducing native species would be managed the same as under Alternative B.

TERRESTRIAL SPECIAL STATUS SPECIES

Under Alternative D, the types of impacts to special status species would be similar to those described under Alternative B and Section 3.4.11.2.2. This alternative, together with Alternative E, would have the lowest level of adverse impacts to special status species. This alternative would include a reduction of habitat that overlaps with areas available for OHV use and grazing activities which would benefit wildlife and their habitats more than Alternative A due to increased regulations and less surface disturbance.

In Alternative D, critical habitat for MSOs overlaps with Canyon Rims MA, Cedar Mesa MA, Dark Canyon MA, Indian Creek MA, and White Canyon MA in the Planning Area. MSO management under Alternative D is similar to Alternative B, with the exception that all overnight use in MSO PACs would be prohibited seasonally, which could increase MSO nesting success. As with Alternative C, no MSO critical habitat is within areas where ROW development may be allowed. Under Alternative D, some areas identified under Alternative C as ROW avoidance areas are identified as ROW exclusion areas, and Alternative D has a higher acreage of MSO critical habitat within ROW exclusion areas. Alternative D would have fewer potential impacts to MSO critical habitat than Alternatives A, B, and C.

In Alternative D, critical habitat for southwestern willow flycatcher overlaps with San Juan River MA and Sand Island MZ. The overlapping critical habitat acreage with recreational management areas is the same as Alternative B and C. Therefore, the impacts due to visitor use and disturbance would likely be the same as these alternatives. Acres of critical habitat overlapping with ROW avoidance areas is reduced when compared to Alternatives B and C. Therefore, there is potential for an increase in impacts as a result of surface disturbance because more acres would be ROW avoidance. Table 3-49 lists the total acreages of critical habitat in areas with identified uses or management decisions under this alternative.

3.4.11.2.7. Impacts under Alternative E

Aquatic Wildlife and Fisheries Habitats

Under Alternative E, management actions would emphasize resource protection and Traditional Indigenous Knowledge, including consideration of natural processes and seasonal cycles, which

would result in an overall reduction in potential disturbance to riparian and aquatic wildlife and habitats when compared to Alternatives A, B, and C and may be similar to the effects disclosed under Alternative D. Alternative E, however, would take a more active approach to maintaining, restoring, and/or improving habitat conditions for native fish, amphibians, and other aquatic species.

Alternative E does not use the same recreation management framework as Alternatives A, B, C, and D and instead would manage recreation within four landscape-level zones. As with other alternatives, potential effects on habitats within these landscape-level zones would be commensurate with the type and intensity of recreation for which each would be managed (see Section 3.4.11.2.2 for more detail). Riparian and aquatic habitat within front or middle country zones would likely experience higher intensity of recreational uses and visitation, and riparian and aquatic habitat within back country or primitive zones would likely experience a lower intensity of recreational use and visitation. Under Alternative E, recreation management would be preventative (such as closing areas to recreation where damage is anticipated) and would implement a permit system for all overnight and day use in canyons and reduce group sizes. These management actions would reduce the risk of recreational use-related effects and/or intensity of impacts to riparian and aquatic habitats and wildlife when compared to Alternative C, and would provide even greater reductions when compared to Alternatives A and B. Similar to Alternative C, Alternative E would provide flexibility in management to protect and prevent disturbance to Monument objects by encouraging the practice of Leave No Trace principles; prohibiting dispersed camping within 0.25 mile of surface water unless in an existing or designated campsite or area; and monitoring water resources to identify whether recreational water pumping needs to be limited. These management actions would result in a reduction of the risk of recreational use-related effects and/or intensity of impacts to riparian and aquatic habitats when compared to Alternatives A and B. A prohibition of swimming in in-canyon stream and pool habitats would result in further reductions in risk of contamination and potential for disturbance of riparian and aquatic habitats when compared to Alternative D. See Section 3.4.3.2 for more detail.

Alternative E would continue to allow livestock grazing, and these activities would have the potential to occur in a similar area within riparian and aquatic habitats compared to Alternative B (see Table 3-47); however, livestock grazing would be managed to protect streams, springs, and other riparian areas, and, as in Alternative D, new water developments and trailing along the length of riparian areas would be prohibited, which would result in additional reductions in risk of disturbance to riparian and aquatic habitats. OHV areas would be similar to those described for Alternative B. As with Alternatives C and D, no areas within the Monument would be available for ROW development, and the remainder of the Monument not already excluded from ROW development would be a ROW avoidance area. Under Alternative E, riparian and aquatic habitat within ROW exclusion areas would be greater than under Alternatives A, B, C, and D, which would result in further reductions in the risk for disturbance of aquatic wildlife and their habitats. Overall, Alternative E would result in a reduction in potential surface-disturbing activities compared to Alternatives A, B, C, and D, which would reduce direct and indirect impacts to aquatic wildlife and habitats.

Under Alternative E, vegetation management would emphasize a Traditional Indigenous Knowledge approach. Restoration actions would rely on natural vegetation recruitment, and mechanical vegetation management techniques (not inclusive of chaining) would be implemented only when necessary to protect Monument objects, and restoration actions in wilderness areas and other LWC would be required to maintain or enhance wilderness characteristics. These actions would be less likely to result in temporary, indirect effects on riparian and aquatic habitats, though may be less likely to achieve desirable habitat conditions for existing degraded habitats in the short term.

The effects of management of special designations on riparian and aquatic habitats would be like those described for Alternative A; however, two additional ACECs would be designated under Alternative D, which could result in additional management protections for riparian and aquatic habitats within the boundaries.

AQUATIC SPECIAL STATUS SPECIES

Under Alternative E, management and potential effects on BLM and USDA Forest Service sensitive species, MIS, SCC, and Utah SGCN aquatic species would be similar to those described for general aquatic wildlife under this alternative. Although potential impacts to special status species and habitats may occur, implementation of prohibitions on recreational activities and livestock trailing within and adjacent to riparian and aquatic habitats, along with grazing management that would prioritize protection of aquatic habitats, would result in fewer impacts to sensitive fish species such as bluehead and flannelmouth suckers. Impacts to special status species and habitats would be greatest in areas of high visitation or where other surface-disturbing activities may occur. Additionally, under Alternative E, management of fish, aquatic wildlife and habitat would emphasize the maintenance and benefit of culturally important and ecologically significant species, such as the Colorado river cutthroat trout. Coordination between the BEC, Tribal Nations, and UDWR would allow for the introduction, transplantation, augmentation, and re-establishment of the Colorado River cutthroat trout and other endangered Colorado River fish species. Therefore, actions under Alternative E would be likely to benefit special status fish populations through stocking efforts and habitat restoration efforts. Other special status aquatic species may also indirectly benefit from these management efforts.

Under Alternative E, the area of designated critical habitat for the razorback sucker and Colorado pikeminnow located within areas where ROW development would be available and/or avoided would be reduced compared to Alternative D. Areas available for ROW development and OHV use would all overlap less designated critical habitat compared to Alternative C; areas available for livestock grazing would overlap the same amount of critical habitat as Alternative B (see Table 3-48). Management of and impacts to federally listed fish species would be consistent with the impacts described for all alternatives. In addition, as described in Section 3.4.11.2.2, authorization of discretionary activities within critical habitat or actions outside of critical habitat that may affect ESA-listed fish species would require consultation with the USFWS and development of measures designed to avoid, minimize, or mitigate impacts to the species and their critical habitat.

Terrestrial Wildlife Habitats

As described under Aquatic Wildlife and Fisheries Habitats, Alternative E was developed with a different approach to recreation management and other management actions compared to all other alternatives. Alternative E has a strong emphasis on collaboration with the BEC, incorporation of Traditional Indigenous Knowledge, and resource protection. The alternative would take a more active approach to maintaining, restoring, and/or improving habitat conditions for native terrestrial wildlife species, likely improving wildlife habitat relative to Alternative A. The preventative approach to recreation management, permit system, and restrictions placed on dispersed camping within 0.25 mile of surface waters would all serve to reduce potential impacts to wildlife relative to Alternative A. Areas open and closed to OHV use are like those under Alternative B, with a slightly larger area closed to OHV use under Alternative E.

As with Alternative A, the San Juan River ACEC, Shay Canyon ACEC, Valley of the Gods ACEC, and Indian Creek ACEC would be carried forward under Alternative E. In addition, the 85,856-acre Aquifer Protection ACEC and 11,465-acre John's Canyon Paleontological ACEC would be

designated. Protective management associated with all ACECs would benefit wildlife species and habitat throughout the entire Decision Area.

Agencies would coordinate with the BEC and Tribal Nations to determine fence locations and establish fence standards to allow wildlife movement within existing or potential movement corridors, with the objective of benefitting wildlife connectivity, as described in Section 3.4.11.2.2. Traditional Indigenous Knowledge would be used in conjunction with agency data and standards to inform this process. This kind of coordination would be reduced under Alternative A. Management of water catchments would be like that under Alternative D but would also prohibit livestock access to catchments and require that catchments are constructed to prevent wildlife entrapment, resulting in a greater benefit to wildlife.

Discretionary actions carried out in wildlife protection areas would be subject to special conditions regulating use, especially during certain seasons. Agencies would coordinate with the BEC and Tribal Nations to incorporate Traditional Indigenous Knowledge to develop any closures or seasonal restrictions, which would reduce impacts to wildlife habitat in closure locations and during seasonal restrictions due to the reduced extent or intensity of recreational and other surface-disturbing uses. Because this coordination has not occurred, the difference in the extent of closures or seasonal restrictions from other alternatives cannot be assessed. This kind of coordination would be absent under Alternative A.

Alternative E would maintain or provide habitat for culturally and ecologically important species. The disturbance from habitat management for these species would be minimized except during habitat maintenance projects or vegetation management. In general, the increased focus on natural processes, minimizing human-caused impacts to wildlife and habitat, and less active management would often result in fewer impacts to wildlife relative to Alternative A. In some cases, focusing less on active management may result in less management flexibility to address site-specific concerns and assist natural recovery from disturbances.

The agencies would take Traditional Indigenous Knowledge into account when managing the five mesas and other desert bighorn sheep habitats. No livestock grazing would be allowed on the five mesa tops and other identified important habitat or connectivity areas. There would also be increased management of domestic livestock within a 10-mile buffer of bighorn sheep habitat compared to Alternative A.

TERRESTRIAL SPECIAL STATUS SPECIES

Under Alternative E, agencies would collaborate with the BEC and the USFWS in applying special status species conservation measures for all activities to comply with the ESA, Forest Service Manual 2600, Chapter 2670 - *Threatened, Endangered, and Sensitive Plants and Animals*, BLM Manual 6840 - *Special Status Species Management*, and UDWR guidance. Agencies would collaborate with the BEC in the development of pre-activity monitoring requirements for special status species for Indigenous peoples' traditional and ceremonial uses. Projects with the potential to impact these species would be designed to avoid impacts to these species and/or achieve no net loss of the species and their habitats and habitat connectivity, forage, and/or prey species. Due to this management, Alternative E would have fewer adverse impacts on special status species within the Monument compared to impacts under Alternative A. Impacts to special status species would be similar to impacts described for terrestrial wildlife species under Alternative E. Translocation of special status species for conservation and recovery would occur only if culturally appropriate and would include genetic and disease monitoring. Management of Gunnison's prairie dogs (*Cynomys gunnisoni*) would be similar to Alternative D, but with additional consideration of other species dependent on prairie dogs and the ecosystems created by their presence.

Management of MSO under Alternative E is like that under Alternative B but with additional restrictions. All recreational uses within PACs would be prohibited seasonally, and wood harvesting within 100 feet of PACs would be prohibited. Prohibiting all recreational uses in PACs could increase MSO nesting success rates. Table 3-49 lists the total acreages of critical habitat that overlap areas with identified uses or management decisions under this alternative.

Raptor management under Alternative E is like that under Alternative B, with the addition of potential permanent closures of OHV routes, trails, and climbing trails in nesting areas. Reducing travel and activities within areas with nesting raptors could decrease nest failure for raptors, which would potentially positively affect population trends. The increased regulations and education opportunities under this alternative would have more of a net benefit to raptors than Alternative A.

3.4.11.2.8. Cumulative Impacts

The cumulative impacts analysis for fish, aquatic wildlife, and aquatic habitat is restricted to the Planning Area and includes aquatic and riparian areas within the 100-year floodplain. The cumulative impacts analysis for terrestrial wildlife and their associated habitats is the Planning Area. The cumulative impacts of past and present actions to wildlife, fisheries, and their habitats in the Planning Area are captured in the description of the affected environment. RFFAs with the potential to impact fish and wildlife species include specific proposed range improvements, ROW developments, recreational developments (e.g., trails, trailheads, campground expansions, backcountry airstrip rehabilitation, boat ramps), recreational uses (e.g., camping, hiking, OHV use, climbing), vegetation management, prescribed fire treatments, oil and gas exploration, water withdrawals and depletions, and paleontological excavations. The projects with potential impacts are the House on Fire Trailhead, Indian Creek Allotment Range Improvements, reauthorize existing SRPs, Bluff River Trail, Aneth D-212X oil and gas well application for permit to drill, water tank and associated pipeline for culinary water use, ROW UTU-96101 for geotechnical test boreholes, East League livestock water wells, Flats water wells and Kane Gulch fence, Cave Canyon water wells, Red Canyon Water wells, Summit Operating, LLC, pipeline ROW proposal, Mancos Mesa ROW access, and the Utah Back Country Pilots Association Dark Canyon Airstrip. These actions are likely to have various impacts to surface disturbance and, therefore, are also likely to impact fish, wildlife, and their associated habitats (see Appendix J).

Terrestrial Wildlife Habitats

Approximately 42 acres of surface disturbance is anticipated from all RFFAs within the Planning Area, with a majority of these actions being for recreational facility development, range improvement, and well development projects. Examples of RFFAs with potential to impact terrestrial wildlife species include ROW UTU-96101 for geotechnical test bore holes, water tank and associated pipeline for culinary water use, East League livestock water wells (DOI-BLM-UT-Y020-2020-0037-CX), North Cottonwood toilet construction and installation (DOI-BLM-UT-Y020-2022-0009-DNA), Mancos Mesa ROW access, Utah Back Country Pilot Association Dark Canyon Airstrip UTU-94768 (DOI-BLM-UT-Y020-2021-0034-EA), Hamburger Rock Campground improvements and expansion (DOI-BLM-UT-Y020-2021-0017-EA), and Goosenecks Campgrounds and trails (DOI-BLM-UT-Y020-2017-0001-EA). Approximately 3,162 acres of surface disturbance is anticipated from all RFFAs outside the Planning Area for vegetation management and fuels reduction projects. The impacts of these actions could extend into the Planning Area if the associated impacts are hydrologically connected and if the RFFA is located upstream of the Planning Area. The intensity of potential impacts to fish, wildlife, or their habitats is dependent on several factors, including seasonal timing, duration, and proximity of the action to the Planning Area.

The proposed actions within the Planning Area are likely to result in the temporary displacement of wildlife as a result of noise and human presence; however, some of the proposed recreational facilities (e.g., Goosenecks Campground and Trails) would occur in highly visited RMAs. Although disturbance to wildlife would likely be greater in these areas, the long-term disturbance effects would also be locally concentrated. Areas outside of concentrated recreational use areas would likely retain relatively low levels of disturbance and impact. Some recreational project disturbances would be located partially in shrubland and grassland communities that provide habitat for big game and some avian species. Potential cumulative impacts to big game migration could occur; however, a site-specific analysis of impacts is not possible because most big game seasonal movements in Utah are elevational, and UDWR has not mapped migration corridors in the Planning Area to date. Other projects would occur in areas that were previously disturbed, offering minimal habitat for wildlife.

RFFAs that are being proposed for habitat improvement include the North Elk Ridge Forest Health Project, Mormon Pasture Mountain Wildlife Habitat Improvement Project, Maverick Point Project, Abajo-BENM watershed restoration project, and South Elk Ridge Aspen restoration project. These actions would likely have temporary impacts to wildlife species and their associated habitats due noise and ground-disturbing activities; however, the long-term impacts would benefit habitat for wildlife by restoring native plant communities, thereby increasing foraging and nesting habitat for big game and avian species.

Aquatic Wildlife and Fisheries Habitats

Reasonably foreseeable range improvement projects include livestock enclosures and water development projects that would help protect riparian habitat important for fish and amphibian species and some species of migratory birds. Examples of these RFFAs include development of an access road to state land UTU-96194 for drilling a livestock water well, Flats Water Wells and Kane Fence, Beef Basin and Dark Canyon Plateau range improvements, Slickhorn Allotment water wells (DOI-BLM-UT-Y020-2021-0008-EA), Red House Cliffs water wells (DOI-BLM-UT-Y020-2020-0029-EA), and Lockhart Allotment range improvement project. Development of alternative water sources for livestock would benefit aquatic fish and wildlife by providing localized and concentrated watering areas for livestock, thereby reducing the potential cumulative impacts of trampling, grazing, and increased waste and nutrient levels in riparian areas. Under all alternatives, priority would be given to meeting or making progress toward meeting the Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah, at minimum, (BLM 1997) or to USDA Forest Service desired conditions for rangelands, thus minimizing potential contribution to cumulative impacts from livestock grazing.

Other RFFAs that would have direct impacts to aquatic habitat are the UDOT San Juan Bridge Repair project and the Cottonwood Wash Bridge Replacement project. The impacts of these proposed actions would likely be temporary and may include temporary displacement of aquatic species, substrate disturbance, and sedimentation.

Future management under the 2008 Monticello RMP and the 1986 Manti-La Sal LRMP would continue to allow activities that would impact wildlife habitat, including oil and gas development, timber harvest, recreation, grazing, and OHV use. Vegetation management in the immediate vicinity of the Planning Area under the 2008 Monticello RMP and the 1986 Manti-La Sal LRMP would continue, as needed, to minimize impacts from these resource uses and maintain continued ecological health. Similarly, impacts to wildlife habitat under Alternatives B, C, D, and E would contribute to cumulative impacts authorized by the RMPs for surrounding federal lands, but vegetation management under Alternatives B, C, D, and E would help reduce these cumulative impacts by managing vegetation to maintain the ecological health of existing wildlife habitats. All

alternatives would contribute cumulatively to these impacts by allowing for future grazing, OHV use, and ROW development over the life of the RMP/EIS; however, these alternatives also provide vegetation management, rehabilitation, and reclamation as necessary to maintain long-term vegetation and soil health, thereby reducing the contribution of each alternative to cumulative impacts of reasonably foreseeable projects in the Planning Area. Vegetation management and habitat improvement projects would have temporary impacts to fish and wildlife species but would have long-term positive impacts that would increase habitat quality for fish, wildlife, and their associated habitats.

3.4.12. Visual Resources

3.4.12.1. AFFECTED ENVIRONMENT

The visual resources of BENM are highly scenic, highly valued by the public, minimally developed, and highly intact. Many areas within BENM possess a high degree of scenic quality and a high level of sensitivity to change. BENM contains internationally recognized scenic destinations and draws an increasing number of visitors who come to the area to recreate, engage in photography, and sightsee. In general, high scenic quality within BENM is a product of the area's diverse vistas and canyons; extraordinary topography; a scenic river corridor; dramatic, colorful, and unusual geology; cultural history, including pre-contact archaeological sites; and lack of development. Areas with high visual sensitivity are the primary result of the high degree of visitor interest in and public concern for a particular area's visual resources, the area's high degree of public visibility, the level of use of an area by the public, and the type of visitor use that the area receives. For some, including members of the Hopi, Navajo, Zuni, and Ute Mountain Ute Tribes and the Ute Indian Tribe of the Uintah and Ouray Reservation, the entire BENM landscape is considered sacred and provides the opportunity to connect to ancestors. Visual sensitivity is heightened by the landscape's sacredness to Indigenous peoples.

Additional information associated with the BLM VRM system, including the Visual Resource Inventory (VRI), the USDA Forest Service Visual Management System, and USDA Forest Service SMS are included in the 2020 AMS.

The majority of BENM BLM-administered lands was inventoried as having High Scenic Quality (73%) and less than 1% inventoried as Low Scenic Quality. Approximately 82% of BENM BLM-administered land was inventoried as having high public sensitivity to changes in the landscape character, with less than 1% of the area inventoried as having low public sensitivity to change in the landscape character. Approximately 61% of the BLM-administered area was inventoried as being in the foreground-middleground distance zone (visible areas up to 5 miles from common viewing platforms such as primary travel routes, communities, and viewpoints); approximately 1% was inventoried as being in the background distance zone (5–15 miles); and approximately 38% was inventoried as being in seldom-seen locations due to landform screening or distance from viewing platforms (beyond 15 miles).

More than 35% of the BLM-administered lands in BENM are in WSAs and are classified as VRI Class I with the administrative overlay of the VRI I classification for WSAs. Approximately 56% of the BLM-administered lands inventoried within BENM was VRI Class II. Without the administrative overlay of the VRI I classification of WSAs, almost 90% of the BLM-administered lands in BENM inventoried as VRI Class II, the highest classification that results from combining scenic quality, public sensitivity, and distance zones. Slightly more than 6% was inventoried as VRI Class III. Less than 2% was inventoried as VRI Class IV.

Table 3-50 through Table 3-55 depict the different components of the BLM VRI and the current BLM VRM classes for BENM. Further, Appendix A, Figure 3-28, BLM VRI classes with VRI Class I and USDA Forest Service existing scenic integrity; Figure 3-29, BLM VRI classes without VRI Class I; Figure 3-30, BLM VRI scenic quality and USDA Forest Service scenic attractiveness; Figure 3-31, BLM VRI sensitivity levels; Figure 3-32, BLM VRI distance zones; and Figure 3-33, BLM VRM classes and USDA Forest Service Visual Quality Objectives, display these data within the boundaries of BENM.

Table 3-50. BLM Visual Resource Inventory Class Acres with Visual Resource Inventory Class I

BLM VRI Class	Acres
Class I	379,466
Class II	605,920
Class III	69,067
Class IV	20,402

Source: BLM (2023).

Table 3-51. BLM Visual Resource Inventory Class Acres without Visual Resource Inventory Class I

BLM VRI Class	Acres
Class II	962,833
Class III	91,931
Class IV	20,089

Source: BLM (2023).

Table 3-52. BLM Visual Resource Inventory Scenic Quality

BLM Scenic Quality	Acres
Scenic Quality A inventoried	779,581
Scenic Quality B inventoried	287,558
Scenic Quality C inventoried	7,715

Source: BLM (2023).

Table 3-53. BLM Visual Resource Inventory Sensitivity Levels

BLM Sensitivity Level	Acres
Maintenance of visual quality has high value	882,340
Maintenance of visual quality has moderate value	192,329
Maintenance of visual quality has low value	185

Source: BLM (2023).

Table 3-54. BLM Visual Resource Inventory Distance Zones

BLM Distance Zone	Acres
Foreground-Middleground	656,344
Background	10,832
Seldom-Seen	407,678

Source: BLM (2023).

Table 3-55. Current BLM Visual Resource Management Class Acres

BLM VRM Class	Acres
Class I	411,245
Class II	304,949
Class III	212,623
Class IV	143,845

Sources: BLM (2008a, 2008b, 2020).

The 1986 Manti-La Sal LRMP identified VQOs for all lands within the forest to establish a degree of acceptable alteration to the characteristic landscape based on the public's concern for scenic quality and the diversity of natural features. The USDA Forest Service portion of BENM contains the peaks forming Bears Ears Buttes and the upper portions of Arch Canyon and Dark Canyon Wilderness. Based on the 1986 Manti-La Sal LRMP, Dark Canyon Wilderness, an area adjacent to a natural arch in Allen Canyon, and a portion of Hammond Canyon were assigned a Preservation VQO where management activities are limited, allowing only for ecological changes. Additionally, Texas Canyon, Arch Canyon, Butts Canyon, and the upper reaches of Cottonwood Creek, including Notch Canyon, are managed as a Retention VQO where management activities cannot be visually evident. The remaining areas of the USDA Forest Service portion of BENM are currently managed under a Partial Retention VQO, including Bears Ears Buttes and the Elk Ridge Road Scenic Backway corridor, or under a Modification VQO.

The 2022 Manti-La Sal SMS inventory (2022 SMS inventory) (USDA Forest Service 2022) identified scenic attractiveness classes for all lands managed by the USDA Forest Service in BENM. Based on the high-quality landscapes that comprise the USDA Forest Service-managed portion of BENM, only a small area was inventoried as Class C (less than 1%), with large areas of Class A (approximately 46%) and Class B scenery (approximately 53%). Specific landscapes identified as Class A scenery, where the landscape is distinctive with outstanding scenic quality, include the Bears Ears, Woodenshoe Canyon, Dark Canyon, Arch Canyon, Hammond Canyon, Warren Canyon, Peavine Canyon, the east side of Shay Mountain, Arch Canyon, Texas Canyon, and other canyon landscapes within BENM.

As part of the 2022 SMS inventory (USDA Forest Service 2022), the level of existing scenic integrity was identified for all lands managed by the USDA Forest Service in BENM. The portion of BENM within the Dark Canyon Wilderness Area was inventoried as possessing a very high level of existing scenic integrity, where the scenic character has been preserved, except for the areas adjacent to existing cherry-stem travel routes (e.g., Peavine Corridor). Those areas were identified as containing a moderate level of existing scenic integrity. Large portions of BENM were inventoried as having a high level of existing scenic integrity, where the scenic character has been retained. This includes areas adjacent to Arch Canyon, Texas Canyon, Butts Canyon, Hammond Canyon, Notch Canyon, Bull Canyon, Shay Mountain, west of Shay Ridge, and other canyon landscapes within BENM, as

well as the upland areas adjacent to the Dark Canyon Wilderness Area. Moderate existing scenic integrity was inventoried along most of the travel routes within BENM, including the Elk Ridge Scenic Backway and primitive, high-clearance roads. Additionally, areas adjacent to existing recreation areas or highly used landscapes where scenic deviations are noticeable but remain subordinate to the existing scenic character, were inventoried at a moderate level of existing scenic integrity. Other portions of BENM, where scenic deviations are more noticeable but still remain subordinate to the existing scenic character, were inventoried as containing a low level of existing scenic integrity.

Table 3-56 through Table 3-58 depict the USDA Forest Service scenic attractiveness ratings, the USDA Forest Service existing scenic integrity, and the current USDA Forest Service VQO for BENM. Further, Appendix A, Figure 3-28, BLM VRI classes with VRI Class I and USDA Forest Service existing scenic integrity; Figure 3-30, VLM VRI scenic quality and USDA Forest Service scenic attractiveness; and Figure 3-33, BLM VRM classes and USDA Forest Service Visual Quality Objectives display these data within the boundaries of BENM.

Table 3-56. USDA Forest Service Scenic Attractiveness

USDA Forest Service Scenic Attractiveness	Acres
Class A	134,473
Class B	153,859
Class C	1,310

Source: USDA Forest Service (2022).

Table 3-57. USDA Forest Service Existing Scenic Integrity

USDA Forest Service Existing Scenic Integrity	Acres
Very High	46,896
High	101,882
Moderate	104,863
Low	35,374

Source: USDA Forest Service (2022).

Table 3-58. Current USDA Forest Service Visual Quality Objective Acres

USDA Forest Service VQO	Acres
Preservation	50,671
Retention	9,068
Partial Retention	102,584
Modification	125,207

Source: USDA Forest Service (1986).

As identified in the 2022 BEITC LMP:

Any disruption to the natural world would negatively affect the viewshed, and by extension Native people whose spiritual power resides in that natural world. Any changes to that landscape that are done in a disrespectful manner negatively affect

all people, the ecosystem, and all life forms. Such changes include mining, clear-cutting of timber, and creating roads in formerly roadless areas.

Most of BENM is undeveloped and exhibits intact visual characteristics due to the remote, rugged, and inaccessible qualities of the area. Although not dominant, imprints on the land associated with management actions are visible including transmission lines, roads, livestock grazing infrastructure, vegetation management, and recreational developments.

The BLM and USDA Forest Service analyze all proposed actions in BENM for their visual impacts and conformance with visual management objectives (i.e., BLM VRM classes, USDA Forest Service VQOs, or USDA Forest Service SIOs). Projects are planned and designed to meet or exceed visual management objectives so that projects blend in with the natural landscape (scenic) character and impacts to the visual environment are minimized. This approach has been and continues to be effective in maintaining the Monument's landscape (scenic) character and scenic quality.

Anticipated future increases in visitation, recreation and tourism, vehicular use, and visitation to adjacent national park units will likely result in the need for additional recreational infrastructure (e.g., trailheads, campgrounds, interpretive sites, parking, trails).

Additional livestock grazing infrastructure (e.g., fencing, water developments, etc.) and vegetation management and restoration projects are likely to be implemented based on past trends. Local- and regional-scale utility ROWs (buried and aboveground) are anticipated to be authorized if past trends continue, with these most likely being sited adjacent to existing highway corridors. This range of development within BLM and USDA Forest Service jurisdiction could result in modest increases in visual contrast, especially in the foreground/midground distance zones, throughout the Planning Area, but these types of facilities are not forecasted to be implemented in locations or at scales or densities that would cause scenic quality/scenic attractiveness ratings to shift in more restrictive VRM class, VQO, and SIO areas (VRM Class I, VRM Class II, Preservation VQO, Retention VQO, Very High SIO, or High SIO).

3.4.12.2. ENVIRONMENTAL CONSEQUENCES

3.4.12.2.1. Issues

- How would proposed management actions affect scenic quality, landscape (scenic) character, scenic integrity, and the public's highly valued experience of enjoying scenery?
- How would proposed management actions affect inventoried visual values?

3.4.12.2.2. Impacts Common to All Alternatives

Table 3-59, Table 3-60, and Table 3-61 provide acreages for BLM and USDA Forest Service classifications. Under all alternatives, the BLM has allocated VRM Class I to lands within WSAs, specific ACECs, and WSRs where administrative decisions, beyond typical management decisions, have been made to preserve a natural landscape. Similarly, the USDA Forest Service has allocated a Very High SIO (or Preservation VQO) to all lands within designated wilderness areas. Appendix A, Figure 2-15, Alternative A, Visual Resource Management classes and scenic integrity objectives; Figure 2-16, Alternative B, Visual Resource Management classes and scenic integrity objectives; Figure 2-17, Alternative C, Visual Resource Management classes and scenic integrity objectives; Figure 2-18, Alternative D, Visual Resource Management classes and scenic integrity objectives; and Figure 2-19, Alternative E, Visual Resource Management classes and scenic integrity objectives depict the VRM class and SIO (or VQO for Alternative A) allocations for each RMP/EIS alternative. The BLM and USDA Forest Service would also collaborate with the BEC to protect viewsheds and visual resources consistent with Tribal values.

Increases in viewer sensitivity are anticipated under all alternatives as undeveloped, naturally intact lands become scarcer throughout the United States. The public will likely become increasingly sensitive to changes in landscape character in BENM. The management prescriptions associated with the alternatives would not lead to measurable changes in sensitivity levels beyond continuation of existing trends and forecasts. No changes to BLM distance zones are anticipated; this is because no new primary travel corridors or other changes to major viewing platforms, from which BLM distance zones are established, would occur under any alternative.

Changes to the scenic quality and scenic character outside BLM or USDA Forest Service influence or control, including climate change and development of adjacent lands or inholdings not under federal management, would continue to impact landscape (scenic) character within BENM.

Table 3-59. Summary of Scenic Quality Rating and Proposed Visual Resource Management Class by Alternative on BLM-Administered Lands

Alternative Area	Scenic Quality A Inventoried (acres)	Scenic Quality B Inventoried (acres)	Scenic Quality C Inventoried (acres)
Alternative A			
VRM Class I	364,408	46,837	0
VRM Class II	196,935	107,066	884
VRM Class III	113,395	96,732	2,476
VRM Class IV	103,837	35,600	4,362
Alternative B			
VRM Class I	363,434	46,792	0
VRM Class II	408,090	231,460	6,898
VRM Class III	8,025	9,282	829
VRM Class IV	0	0	0
Alternative C			
VRM Class I	424,944	82,792	0
VRM Class II	346,697	195,918	6,898
VRM Class III	7,908	8,823	829
VRM Class IV	0	0	0
Alternative D			
VRM Class I	628,427	173,056	491
VRM Class II	150,694	114,478	7,236
VRM Class III	530	3	0
VRM Class IV	0	0	0
Alternative E			
VRM Class I	767,719	273,540	7,703
VRM Class II	11,317	13,670	6
VRM Class III	0	0	0
VRM Class IV	0	0	0

Sources: BLM (2023); BLM and USDA Forest Service GIS (2022).

Table 3-60. Summary of Scenic Attractiveness Class and Proposed Scenic Integrity Objective (or Visual Quality Objective) by Alternative on National Forest System Lands

Alternative Area	Class A (acres)	Class B (acres)	Class C (acres)
Alternative A			
Preservation VQO (Very High SIO)	50,067	605	0
Retention VQO (High SIO)	8,792	280	0
Partial Retention (Moderate SIO)	26,073	75,675	842
Modification (Low SIO)	48,899	75,868	463
Alternative B			
Very High SIO	46,584	211	0
High SIO	87,886	153,640	1,310
Moderate SIO	3	6	0
Low SIO	0	0	0
Alternative C			
Very High SIO	46,584	211	0
High SIO	87,886	153,640	1,310
Moderate SIO	3	6	0
Low SIO	0	0	0
Alternative D			
Very High SIO	46,584	211	0
High SIO	87,886	153,640	1,310
Moderate SIO	3	6	0
Low SIO	0	0	0
Alternative E			
Very High SIO	134,235	151,801	1,308
High SIO	102	1,135	0
Moderate SIO	0	0	0
Low SIO	0	0	0

Source: BLM and USDA Forest Service GIS (2022); USDA Forest Service (2022).

Table 3-61. Summary of Existing Scenic Integrity and Proposed Scenic Integrity Objective (or Visual Quality Objective) by Alternative on National Forest System Lands

Alternative Area	Existing Very High Scenic Integrity (acres)	Existing High Scenic Integrity (acres)	Existing Moderate Scenic Integrity (acres)	Existing Low Scenic Integrity (acres)
Alternative A				
Preservation VQO (Very High SIO)	46,207	3,997	493	1
Retention VQO (High SIO)	0	8,719	190	163
Partial Retention (Moderate SIO)	1	34,988	48,520	19,110
Modification (Low SIO)	293	53,601	55,255	16,104

Alternative Area	Existing Very High Scenic Integrity (acres)	Existing High Scenic Integrity (acres)	Existing Moderate Scenic Integrity (acres)	Existing Low Scenic Integrity (acres)
Alternative B				
Very High SIO	45,499	745	635	0
High SIO	1,397	101,107	104,217	35,374
Moderate SIO	0	0	9	0
Low SIO	0	0	0	0
Alternative C				
Very High SIO	45,499	745	635	0
High SIO	1,397	101,107	104,217	35,374
Moderate SIO	0	0	9	0
Low SIO	0	0	0	0
Alternative D				
Very High SIO	45,499	745	635	0
High SIO	1,397	101,107	104,217	35,374
Moderate SIO	0	0	9	0
Low SIO	0	0	0	0
Alternative E				
Very High SIO	46,845	101,751	103,815	34,993
High SIO	0	0	868	369
Moderate SIO	0	0	0	0
Low SIO	0	0	0	0

Source: BLM and USDA Forest Service GIS (2022); USDA Forest Service (2022).

3.4.12.2.3. Impacts under Alternative A

As described in Section 3.4.12.2.2, Alternative A would continue to allocate VRM Class I to all lands within WSAs, specific ACECs (Valley of the Gods, San Juan River, and Indian Creek), and WSRs where previous administrative or RMP decisions have been made to preserve the natural landscape for 411,245 acres (38% of the BLM portion of BENM). To minimize impacts, to allow only management activities that retain the existing characteristic landscape, and to allow only management activities that would not attract a viewer's attention, 304,949 acres (28%) of BENM were allocated as VRM Class II. This includes other ACECs, non-WSA areas with wilderness characteristics where managed to retain those characteristics, the Colorado River Suitable Segment 2, and other specific areas identified in the 2008 Monticello RMP. Similarly, 212,623 acres (20%) were allocated as VRM Class III where management activities would allow for partial retention of the existing characteristic landscape and would not dominate views. As identified in Table 3-59, portions of Scenic Quality A inventoried areas were allocated as VRM Class III under this alternative, where future management activities would continue to be allowed to attract attention. This could modify the landscapes' scenic quality inventory factor scores and result in a decrease in scenic quality for portions (areas of 100 acres or larger) of the following Scenic Quality Rating Units (SQRUs):

- Beef Basin
- Cottonwood Canyon

- Dark Canyon, Fable Valley
- Fish Springs and Dry Wash
- Grand Gulch
- Lower Indian Creek, Lockhart Basin
- Mancos Mesa
- Road Canyon
- San Juan River
- White Canyon

The BLM allocated 143,845 acres (13%) as VRM Class IV, where management activities could dominate the view and be the major focus for viewers. As identified in Table 3-59, portions of landscapes rated as Scenic Quality A were assigned VRM Class IV under this alternative; specifically, this includes portions (areas of 100 acres or larger) of the following SQRUs:

- Beef Basin
- Cottonwood Canyon
- Dark Canyon; Fable Valley
- Hart's Point
- San Juan River
- White Canyon

To protect areas where previous USDA Forest Service decisions have been made to preserve the landscape, the Dark Canyon Wilderness would continue to be managed under a Preservation VQO where most management activities are prohibited. To minimize impacts, to allow only management activities that would not be visually evident, 9,068 acres (3%) of BENM were allocated as a Retention VQO. Similarly, 102,584 acres (36%) were allocated as a Partial Retention VQO objectives where management activities must remain visually subordinate to the overall characteristic landscape. As identified in Table 3-60, portions of landscapes rated as Class A scenic attractiveness, as part of the 2022 SMS inventory, would be managed as a Partial Retention VQO under this alternative. This could result in further degradation of landscape character, as management activities may introduce elements that are found infrequently or not at all in the characteristic landscape. Because these changes must remain subordinate to the overall visual character of the landscape, and the 1986 Manti-La Sal LRMP includes other management prescriptions to protect the visual landscape, these effects would be limited. The impacts associated with future management activities would be analyzed under separate NEPA actions, as resource uses or activities should meet the adopted VQO. The USDA Forest Service allocated 125,207 acres (43%) of BENM as a Modification VQO, where management activities could dominate the characteristic landscape but must remain compatible with the natural surroundings. As identified in Table 3-60, 48,899 acres of landscapes rated as Class A scenic attractiveness would continue to be managed as a Modification VQO under this alternative. Similarly, as identified in Table 3-60, areas identified in the 2022 SMS inventory as possessing very high, high, or moderate existing scenic integrity would be allocated as a Modification VQO under this alternative. This may lead to degradation of the characteristic landscape where the character has been found to be intact or partially intact as inventoried by the USDA Forest Service. Future management actions in Modification VQOs have the potential to influence and modify the characteristic landscape, especially where the 2022 SMS inventory identified high-quality or highly intact landscapes. Per the 1986 Manti-La Sal LRMP, the USDA Forest Service would continue to

rehabilitate existing projects and areas that do not meet the adopted VQO to enhance characteristic landscapes that deviate from their natural character in BENM.

Management for vegetation, forestry and woodlands, lands and realty, livestock grazing, range improvements, recreation, and transportation under Alternative A could result in direct and indirect impacts to visual resources. Specifically, approximately 735,000 acres would be open to ROW authorization, approximately 716,000 acres open for wood product harvest, and approximately 1,225,000 acres available for livestock grazing. Management actions under these programs, including additional livestock grazing infrastructure, vegetation management projects, and local and regional-scale utility ROWs, on BLM-administered lands and NFS lands could result in modest increases in visual contrast, especially in the foreground and middleground distance zones throughout the Planning Area. These management decisions are not forecasted to be implemented in locations or at scales or densities that would cause scenic quality/scenic attractiveness ratings to shift, especially where managed as VRM Class I or II by the BLM or managed by the USDA Forest Service under a Preservation or Retention VQO. Changes in scenic quality scoring factors, including modification of landforms, vegetation, or cultural modifications associated with management decisions, could reduce the scenic quality ratings where VRM Class III or IV has been allocated by the BLM, allowing for a greater level of visual contrast. Similar types of impacts to USDA Forest Service visual (scenic) character could occur through management for vegetation, forestry and woodlands, lands and realty, livestock grazing, range improvements, recreation, and transportation where Modification VQO allocations could allow for management decisions that would begin to dominate the landscape and could reduce scenic attractiveness ratings.

Management of visual (scenic) resources on BLM-administered lands or NFS lands may also be incompatible with visual management on adjacent lands. Alternative A includes VRM Class IV within the viewsheds of NBNM and Glen Canyon, where Class IV could allow for adverse impacts to these NPS landscapes. Management activities in these areas could dominate the characteristic landscape and be the major focus for viewers. Additionally, Alternative A includes VRM Class III within the viewsheds of Glen Canyon, Canyonlands National Park, and NBNM; this could result in adverse impacts on these NPS landscapes where management activities would be allowed to attract attention of the casual viewer. Continued management of the Bears Ears landscape on the NFS portion of BENM, which is highly visible from adjacent areas, under a Partial Retention VQO for Alternative A could allow for management actions to introduce elements that are found infrequently or not at all in the characteristics landscape potentially attracting attention from adjacent non-NFS areas.

3.4.12.2.4. Impacts under Alternative B

Alternative B contains 1,000 fewer acres of VRM Class I areas than Alternative A. Under this alternative, the San Juan River ACEC would not be managed as VRM Class I; however, VRM Class I areas would protect WSAs, other ACECs, and WSRs. This would result in less protection of landscape character on lands within the San Juan River ACEC than under Alternative A, because management decisions could allow for a low level of visual change. Areas adjacent to existing communication sites, within 0.25 mile of US-191, existing ROW corridors (which parallel several state routes in BENM, including Utah State Routes 95, 211, and 261), ROW open areas, the area adjacent to the Bluff Airport, and specific RMZs would be allocated as VRM Class III to allow for moderate change to the landscape character. Because proposed management activities would be allowed to attract attention in these VRM Class III areas, views from SR-95, -211, and -261 could be affected by future utility development within these designated ROW corridors. To minimize potential visual impacts to the majority of BENM, including LWC, the BLM would allocate VRM Class II for all other lands not managed as VRM Class I or VRM Class III. Compared to Alternative A, under Alternative B, the BLM would manage approximately 195,000 fewer acres as VRM Class III, with

these areas being managed as VRM Class II where the existing character of the landscape would be retained and the allowable level of change to the characteristics would be low. This would result in further protection of landscape character in these portions of BENM. Because no lands would be managed as VRM Class IV under Alternative B, no management activities would be allowed to dominate the view or be the major focus of viewer attention resulting in further protection of landscape character in BENM compared to Alternative A, under which the BLM would continue to manage approximately 144,000 acres as VRM Class IV.

As identified in Table 3-59, portions of Scenic Quality A inventoried areas were allocated as VRM Class III under this alternative, where future management activities would continue to be allowed to moderately change the landscape character. This includes areas where future utility development within designated ROW corridors could cross these landscapes. This could result in a decrease in scenic quality in those areas and therefore lower inventory scores. Specifically, this includes portions of more than 100 acres within the following SQRUs:

- Arch Canyon
- Comb Ridge, Butler Wash
- Fish Springs and Dry Wash
- Lower Indian Creek, Lockhart Basin
- San Juan River
- Upper Indian Creek
- White Canyon

Under Alternative B, the USDA Forest Service would manage the Dark Canyon Wilderness Area (and any USDA Forest Service–recommended wilderness) under a Very High SIO (similar to the Preservation VQO under Alternative A), under which small to no deviations from the scenic character should occur. Compared to Alternative A, the USDA Forest Service would manage approximately 4,000 fewer acres of BENM in Very High SIO or Preservation VQO. This could result in very minor modifications of scenic character within these areas, which would be managed as a High SIO under Alternative B, compared to the Preservation VQO assigned under Alternative A, under which only ecological changes would be allowed. Except for 9 acres in Moderate SIO across Alternatives B, C, and D, all other acres outside of Dark Canyon Wilderness are within the High SIO. Under Alternative A, approximately 9,000 acres are within the Retention VQO, thus a change to approximately 240,000 acres in Retention VQO under Alternatives B, C, and D would emphasize management for the scenic character with limited deviations driven by management actions under these three action alternatives. Under Alternatives B, C, and D, all acres in Modification VQO under Alternative A would be allocated to a High or Moderate SIO. This again prioritizes the intactness of the scenic character under these alternatives compared to Alternative A. A small portion of BENM would be managed under a Moderate SIO, under which deviations, although evident, must still remain visually subordinate to the existing scenic character. These 9 acres occur along the periphery of BENM and would likely be limited in impacts to the scenic character of the Monument. Additionally, the shift to High SIOs across BENM should maintain the scenic character of the Monument over the long term.

To enhance the scenic quality, scenic character, and the characteristic landscape, to the extent practicable, existing visual contrasts remaining from past land uses would be brought into conformance with allocated VRM class objectives and SIOs. By seeking to reduce impacts from prior land uses, the overall visual landscape would more closely resemble the natural landscape character and enhance those landscapes modified prior to designation of BENM. Under Alternative B, the BLM and USDA Forest Service would reclaim landscapes, restore native vegetation, and rehabilitate waterways and riparian areas to enhance natural and historical scenic values that have

been degraded. Additionally, through collaboration with the BEC, protection of visual resources would be informed by Traditional Indigenous Knowledge where appropriate. This would include maintaining and enhancing natural and cultural landscapes to contribute to visitor's sense of place and connection with nature, resulting in increased landscape sensitivity for some visitors. By incorporating a broader approach for management of visual resources including more restrictive visual management objectives, the protection of visual (scenic) values would be more extensive under this alternative compared with Alternative A.

Under Alternative B, impacts to visual resources associated with management for vegetation, forest and wood products, lands and realty, livestock grazing, recreation, and transportation would be reduced compared to Alternative A. This is based on more areas being designated as ROW avoidance or exclusion area, reducing the potential for the introduction of additional utility projects, as well as less area being available for grazing and range improvements which could modify the landscape's vegetation patterns and introduce additional structures into the landscape. These restrictions, in combination with more acres managed under more restrictive VRM classes (Class I and II) and SIOs (Very High and High SIO), would result in less impacts to visual resources under Alternative B than would be allowed under Alternative A. Additional recreation facilities would be constructed in existing high use areas, focusing these management actions in areas already modified by development, minimizing the extent of the landscape potentially modified by new or redeveloped recreation areas.

Alternative B includes smaller areas of VRM Class III within the viewsheds of Glen Canyon, NBNM, and Canyonlands National Park compared to Alternative A. Because no areas would be allocated VRM Class IV under Alternative B, no VRM Class IV would occur within the viewsheds of NBNM or Glen Canyon. This would limit the potential effect on these adjacent NPS units. The USDA Forest Service would manage the Bears Ears landscape under a High SIO for Alternative B which would facilitate additional scenic protections for this culturally significant landscape, visible throughout the region, as any management actions must repeat the form, line, color, texture, and pattern common to the landscape character so completely, and at such scale, that they are not evident.

3.4.12.2.5. Impacts under Alternative C

Under Alternative C, similar VRM Class I areas would protect WSAs, ACECs, and WSRs as Alternative A, except LWC would also be managed as VRM Class I resulting in approximately 97,000 additional more acres managed as VRM Class I compared to Alternative A. This would result in further protection of the natural landscape character within large portions of BENM under Alternative C.

Areas adjacent to existing communication sites, within 0.25 mile of US-191, existing ROW corridors (which parallel several state routes in BENM, including Utah State Routes 95, 211, and 261), ROW open areas, the area adjacent to the Bluff Airport, and specific RMZs would be allocated as VRM Class III to allow for moderate change to the landscape character. Because proposed management activities would be allowed to attract attention in these VRM Class III areas, views from Utah State Routes 95, 211, and 261 could be affected by future utility development within these designated ROW corridors. To minimize potential visual impacts on large areas of BENM, the acres not allocated as VRM Class I or VRM Class III would be managed as VRM Class II. Compared to Alternative A, the BLM under Alternative C would manage approximately 195,000 fewer acres as VRM Class III with these areas being managed as VRM Class I or II. In these areas, the existing character of the landscape would be preserved or retained, with the allowable level of change to the characteristics being limited, resulting in further protection of landscape character in BENM. Because no lands would be managed under VRM Class IV, no management activities would be allowed to dominate the view or be the major focus of viewer attention resulting in further

protection of landscape character in BENM compared to Alternative A, where the BLM would continue to manage approximately 144,000 acres land as VRM Class IV.

As identified in Table 3-59, portions of Scenic Quality A inventoried areas were allocated as VRM Class III under this alternative, where future management activities would continue to be allowed to moderately alter the landscape character. This could result in a decrease in scenic quality in those areas through changes to the landscapes' scenic quality inventory key factor scores associated with these management actions. Specifically, this includes portions of more than 100 acres within the following SQRUs:

- Arch Canyon
- Comb Ridge, Butler Wash
- Fish Springs and Dry Wash
- Lower Indian Creek, Lockhart Basin
- San Juan River
- Upper Indian Creek
- White Canyon

Impacts to the NFS portion of BENM would be the same as Alternative B, and therefore, by incorporating a broader approach for management of visual resources, including more restrictive visual management objectives, Alternative C would provide more extensive protection of visual (scenic) values as compared with Alternative A on NFS lands.

Impacts on visual resources associated with management for vegetation, forest and wood products, lands and realty, livestock grazing, range improvements, recreation, and transportation under Alternative C would be similar to Alternative B except the entire BENM would be designated as either a ROW exclusion or avoidance area. This would result in less potential modification of visual resources by further minimizing the likelihood that additional utility projects could be introduced into the landscape. Additional restrictions on construction of new water wells and range improvements under Alternative C would further limit potential modifications to landscape character and the introduction of additional structure into the landscape compared to Alternative B.

Indirect impacts to adjacent lands under this alternative are the same as those described for Alternative B.

3.4.12.2.6. Impacts under Alternative D

Potential impacts to visual resources under Alternative D would be limited and minor compared to Alternative A because most BLM-administered lands would be managed as VRM Class I or II, except for approximately 500 acres managed as VRM Class III. More than 391,000 additional acres of VRM Class I, compared to Alternative A, would occur under Alternative D, because LWC would be managed as VRM Class I.

Areas adjacent to existing communication sites, near the Bluff airport, and within existing ROW corridors (which parallel several state routes in BENM including Utah State Routes 95, 211, and 261) would be allocated as VRM Class III, to partially retain the existing landscape character. Because proposed management activities would be allowed to attract attention in these VRM Class III areas, views from State Routes 95, 211, and 261 could be affected by future utility development within these designated ROW corridors. To minimize potential visual impacts to the large areas of BENM, the acres not allocated as VRM Class I or VRM Class III would be managed as VRM Class II. Compared to Alternative A, the BLM under Alternative D would manage approximately 212,000

fewer acres as VRM Class III with these areas being managed as VRM Class I or II. In these areas, the existing character of the landscape would be preserved or retained, with the allowable level of change to the characteristics being limited, resulting in further protection of landscape character in BENM. Because no lands would be managed under VRM Class IV, no management activities would be allowed to dominate the view or be the major focus of viewer attention resulting in further protection of landscape character in BENM compared to Alternative A, where the BLM would continue to manage approximately 144,000 acres land as VRM Class IV.

As identified in Table 3-59, portions of Scenic Quality A inventoried areas were allocated as VRM Class III under this alternative, where future management activities would continue to be allowed to moderately alter the landscape character. This could result in a decrease in scenic quality in those areas through changes to the landscapes' scenic quality inventory key factor scores associated with these management actions. Specifically, this includes portions of more than 100 acres within the following SQRU:

- San Juan River

Impacts to the NFS portion of BENM would be the same as under Alternative B.

Impacts to visual resources associated with management for vegetation, forest and wood products, lands and realty, livestock grazing, range improvements, recreation, and transportation under Alternative D would be reduced compared to Alternative A. This is based on the entire BENM being designated as a ROW avoidance or exclusion area, minimizing the potential for the introduction of additional utility projects into the landscape, as well as less area being available for grazing and range improvements which could modify the landscape's vegetation patterns and introduce additional structures into the landscape. Through management direction to close large portions of BENM to OHV use under this alternative, potential impacts associated with this use on visual resources would be minimized compared to Alternative A. This, in combination with more acres managed under more restrictive VRM classes (Class I and II) and SIOs (Very High and High SIO) as previously discussed, these and other management actions are not forecasted to be implemented in locations or at scales or densities that would cause scenic quality/scenic attractiveness ratings to shift in these area. By managing fewer acres under less restrictive VRM Classes (Class III, no lands under Class IV) and SIOs (Moderate) where management activities would be allowed to further modify the landscape, compared to Alternative A, potential changes to scenic quality, scenic character, and the characteristic landscape associated with proposed management decisions would be minimized as activities would only be allowed to attract attention and not dominate the landscape in these areas. Additional recreation facilities would only be constructed if necessary to protect BENM objects, which would further protect visual character compared to Alternative A, B, or C.

Indirect impacts to adjacent lands under this alternative are the same as those described for Alternative B

3.4.12.2.7. Impacts under Alternative E

Potential impacts on visual (scenic) resources under Alternative E would be limited and minor compared to Alternative A because all BLM-administered lands would be managed as VRM Class I or II. Similar but expanded VRM Class I areas, more than 630,000 additional acres of VRM Class I compared to Alternative A, would occur under Alternative E. This includes areas where previous administrative decisions have been made to preserve the natural landscape as well as where BEC identified outback and remote management zones. Because all other lands would be managed as VRM Class II, where management activities would need to retain the existing characteristic landscape and not attract a viewer's attention, BENM visual resources would be the most protected

under this alternative. No land would be managed under VRM Class III, where management activities would need to partially retain the existing landscape character, except for temporary research projects that would terminate within 2 years of initiation. Rehabilitation would begin at the end of the 2-year period. During the temporary project, the Manager may require phased mitigation to better conform with prescribed VRM objectives to protect BENM objects. This would result in approximately 212,000 fewer acres managed as VRM Class III under Alternative E compared to Alternative A, with these areas being managed as VRM Class I or II under Alternative E. In these areas, the existing character of the landscape would be preserved or retained, with the allowable level of change to the characteristics being limited. The management of Front Country and Passage Zones with VRM Class II could result in limiting recreation infrastructure development, including any new developed campgrounds, restrooms, and other proposed facilities within these management zones, due to the more stringent visual requirements associated with VRM Class II compared to VRM Class III or IV. Because no lands would be managed under VRM Class IV, no management activities would be allowed to dominate the view or be the major focus of viewer attention, resulting in further protection of landscape character in BENM compared to Alternative A, where the BLM would continue to manage approximately 144,000 acres as VRM Class IV.

Under Alternative E, the USDA Forest Service would manage all NFS lands as Very High SIO, apart from approximately 1,000 acres that would be managed as High SIO. Under this alternative, all the NFS lands would be managed for the scenic character of the Monument with limited to no visual deviations driven by management actions.

To enhance visual resources to the extent practicable, existing contrasting visual elements remaining from past land uses would be brought into plan conformance with allocated VRM class objectives and SIOs. By seeking to reduce impacts from prior land uses, the overall visual landscape would more closely resemble the natural landscape character and enhance those landscapes modified prior to designation of BENM. Under Alternative E, the BLM and USDA Forest Service would reclaim landscapes, restore native vegetation, and rehabilitate waterways and riparian areas to enhance natural and historical scenic values that have been significantly degraded. The BLM and USDA Forest Service would collaborate with the BEC and Tribal Nations to survey and identify built elements and landscape modifications that damage or degrade culturally affiliated Tribes' cultural practices requiring natural viewsapes informed by Traditional Indigenous Knowledge. Additionally, coordination with the BEC would identify interpretive value or different vantage points and viewsheds in BENM, identify culturally important viewsheds, and create interpretive materials that highlight Tribal connections to distant areas visible from vantage points within BENM. This additional level of collaboration under this alternative would not only protect these landscapes from further landscape modifications, but it would also facilitate education and site interpretation for visitors to gain a greater understanding of the visual landscapes that comprise BENM compared to Alternative A.

Impacts to scenic quality, scenic character, and the characteristic landscape associated with management for vegetation, forest and wood products, lands and realty, livestock grazing, range improvements, recreation, and transportation under Alternative E would be reduced compared to Alternative A. This is based on the entire BENM being designated as a ROW avoidance or exclusion area, minimizing the potential for the introduction of additional utility projects into the landscape. This in combination with the entire BENM managed under more restrictive VRM classes (Class I and II) and SIOs (Very High and High SIO) as previously discussed, these and other management actions are not forecasted to be implemented in locations or at scales or densities that would cause scenic quality/scenic attractiveness ratings to shift. By managing no lands under less restrictive VRM Classes (Class III or Class IV) or SIOs (Low or Moderate), potential changes to scenic quality, scenic character, and the characteristic landscape associated with proposed management decisions would be minimized. Management activities would only be allowed to preserve or retain the natural

character of the landscape and could not attract attention or dominate the landscape under this alternative.

Because Alternative E would only allocate VRM Class I and VRM Class II, it would further protect viewsheds from the adjacent NPS units, including Glen Canyon, Canyonlands National Park, and NBNM relative to all other alternatives. As under Alternatives B, C, and D, the USDA Forest Service would manage the Bears Ears landscape under a High SIO for Alternative E, which would facilitate additional scenic protections for this culturally significant landscape, visible throughout the region, as any management actions must repeat the form, line, color, texture, and pattern common to the landscape character so completely, and at such scale, that they are not evident. Alternative E includes additional protection for the portions of the Bears Ears landscape within the Remote and Outback Zones, which would be managed under a Very High SIO for this alternative, where only subtle deviations are allowed.

3.4.12.2.8. Cumulative Impacts

The cumulative impacts analysis area for visual resources is the visible area surrounding BENM up to 15 miles beyond the boundary. This is the same as the direct and indirect effects analysis area, which corresponds to the background distance zone of the BENM visual inventory. Views can extend beyond this distance, but the BLM and USDA Forest Service chose this 15-mile distance because it represents the limit of visibility beyond which most anticipated development around BENM would not be noticeable to casual observers.

Past and present actions in the cumulative impacts analysis area that have and would likely continue to affect visual resources include previous development of non-federally managed inholdings and adjacent areas for residential, commercial, industrial, and other uses as described in Section 3.4.12.1, which have modified the landscape (scenic) character in those interface zones.

RFFAs and conditions (see Appendix J) in the cumulative impacts analysis area that would likely affect visual resources include development of non-federally managed inholdings and adjacent areas for residential, commercial, industrial, and other uses (e.g., Aneth D-212X Oil and Gas Well, Summit Operating Pipeline ROW, Utah Department of Transportation Bluff Material Site, and Daneros Mine Expansion). Within BENM specifically, all proposed road construction projects in Appendix J have the potential to result in additive effects on visual resources. The proposed ROW UTU-96101 for geotechnical bore holes project has the potential to affect scenic quality where a large water storage tank could be constructed on high point within BENM. This water tank may not meet the assigned VRM class objectives under Alternative E and would be unlikely to be constructed under this alternative and potential cumulative effects would only exist under other alternatives. All future management actions on BLM-administered lands or NFS lands would be required to meet the proposed VRM class objectives or SIOs (or VQO for Alternative A) allocated under each alternative. Alternatives B, C, D, and E would offer more protection of visual (scenic) resources than Alternative A.

It is anticipated that VRI and SMS values will remain mostly stable into the future. That said, viewer sensitivity to landscape change is more likely to increase than scenic quality or scenic attractiveness ratings or distance zones are likely to change. As undeveloped, naturally intact lands become scarcer throughout the country, as local development pushes closer to the boundaries of BENM, and as inholdings are developed, it is likely that national and local general publics will become increasingly sensitive to changes in landscape (scenic) character within BENM. This may result in increases to the landscape's sensitivity ratings (or concern levels for NFS lands) in some inventoried areas of moderate and low sensitivity. Increases in sensitivity are anticipated to rise due to both the increasing number of visitors and visitation expansion into lesser-known areas as

popular destinations become overcrowded. These factors are assumed to result in more of the landscape being explored and valued by more visitors compared to the existing condition. Distance zones are established on important viewing platforms like primary travel corridors, communities, trails, and viewpoints. Although development on the edges of local communities is likely to expand to some degree and some internal travel corridors may become more popular with increased travel counts, the viewing platforms are assumed to remain mostly the same as they were used in the inventory.

A factor that could also impact BENM scenic quality/scenic attractiveness that is outside BLM or USDA Forest Service influence or control is climate change. The intensifying drought and severe wildfires associated with climate change are forecasted to change vegetation (e.g., dead and/or burnt stands of trees, reduced shrub and grass cover, increasing insect and disease pressure, reduced water availability, etc.), especially in shrubland, riparian, and pinyon-juniper woodland vegetation communities, as well as reduce the presence of surface water, potentially to the degree that inventoried scenic quality/scenic attractiveness values would shift.

3.4.13. Natural Soundscapes

3.4.13.1. AFFECTED ENVIRONMENT

The natural soundscape of BENM is not specifically described in Proclamation 10285, but under Proclamation 9558, the proclamation originally establishing the Monument, it was described this way: “The star-filled nights and natural quiet of the Bears Ears area transport visitors to an earlier eon As one of the most intact and least roaded areas in the contiguous United States, Bears Ears has that rare and arresting quality of deafening silence.”

Protection of ambient soundscapes has received growing attention over the past four decades, with legislation dating back to the Noise Control Act of 1972. Subsequent nationwide legislation has described the importance of the acoustical environment for resource protection and visitor experience in protected natural areas, including for NPS units with the implementation of the National Parks Air Tour Management Act of 2000. Because of the abundant noise found in urban and suburban areas, the majority of visitors to protected natural areas seek respite from ambient stressors such as noise. Natural quiet is important for visitors, ecosystem health, and the welfare of nonhuman species that reside in protected natural areas.

Although no soundscape studies have been conducted in BENM, based on acoustic monitoring and audibility logging in a similar setting in the adjacent GSENM, the most frequently encountered unnatural sound sources were high-altitude jet aircraft and vehicles or engines (Southern Utah University 2020). Additionally, the use of drones for recreational and scientific purposes generates increased noise levels while in use, especially when flying at low altitude. Dominant ambient natural sounds included the wind and birdsong, as well as natural quiet. The emphasis for types of use guides soundscape decisions; for motorized, developed settings, the soundscape is generally composed of unnatural, human-made noise as well as natural quiet; for non-motorized, undeveloped settings, the soundscape is generally composed of natural quiet. Several monitored sites in the adjacent GSENM were found to be within the range of the quietest locations monitored in the lower 48 states, based on exceedingly low decibel levels. Based on this study in a similar landscape setting, it is anticipated the soundscapes in BENM are also some of the quietest in the lower 48 states. Additionally, the NPS has developed data depicting existing soundscapes for the lower 48 states. A large portion of the Monument is very quiet—less than 30 A-weighted decibels (dBAs)—which equates to a quiet whisper or ticking watch. The auditory environment and natural soundscape are valued by the Tribal Nations of the BEITC and should remain pristine. For the Hopi, “sounds and vibrations give life, and it is through vibrations that one can hear and connect with the

spirits. In Hopi ceremonies, sacred tones are sung in order to connect with the spirits, and disruptive sounds break the spiritual connections” (see Appendix L:23).

Table 3-62 lists the acres of BENM where different thresholds of existing modeled sound levels currently exist with examples of common sounds to relate the different sounds levels. These are based on L50, a descriptor of loudness, which represents the existing ambient noise levels where the decibel level is exceeded 50% of the time. Appendix A, Figure 3-34, Existing soundscape conditions, displays these existing sound levels within the boundaries of BENM. Data developed by the U.S. Department of Transportation as part of the National Transportation Noise Map Project (U.S. Department of Transportation 2020) provide additional context for existing noise levels in GSENM along rural highways and other roadways, which was not specifically included in the NPS modeling and has the potential to affect areas adjacent to these roadways. In general, U.S. Department of Transportation data show that primary roads with higher speed limits, such as State Routes 95 and 211, produce more noise as compared with interior roads in BENM. It is important to note that the intended use of these data is tracking noise trends; the data should not be used to evaluate noise levels in individual locations or at specific times.

Table 3-62. Existing L50 Sound Levels (A-weighted decibels) Acres

Sound Level (dBA)	Acres
Less than 25 dBA (rustling leaves and normal human breathing)	379,688
25–30 dBA (quiet whisper and ticking watch)	1,077,330
More than 30 dBA (refrigerator hum and quiet library)	33,386

Source: NPS 2021.

Natural soundscape resources are increasingly of public concern; they were noted during scoping for planning efforts and review of proposed projects on BLM-administered and NFS lands. Increasing awareness of BENM recreation opportunities and high-quality landscapes, partially through the use of social media, are resulting in increased visitation along travel corridors and in some quiet, backcountry areas. Increases in noise are anticipated to continue as recreational visitation and air travel increase. Scenic overflights in places like nearby Grand Canyon National Park and the use of drones for recreational and scientific purposes have increased in recent years.

With increasing recreational visitation and air travel (identified as the main generators of human-caused noise within the adjacent GSENM based on the Monument’s 2020 baseline acoustic monitoring report [Southern Utah University 2020]), as well as other noise-producing activities (e.g., vehicle travel, including OHVs, scenic overflights, etc.), it is anticipated the Monument’s acoustic environment would become less quiet over time. Specifically, primary and secondary travel corridors would become less quiet with an increase in visitation and vehicle use.

The demand for scenic overflights on nearby national parks suggests that the demand for that use could occur at BENM, resulting in less quietness. The demand for use of drones for recreational and scientific purposes is forecast to continue. In accordance with the National Parks Air Tour Management Act of 2000, the NPS is currently developing air tour management plans to reduce noise impacts over the parks, including the portion of BENM within 0.5 mile of Canyonlands National Park (the western and northwestern edges of the Monument), NBNM (within the Monument), and Glen Canyon National Recreation Area (the southwestern and southern edges of the Monument). The Canyonlands Air Tour Management Plan (NPS 2022a) and the Natural Bridges Air Tour Management Plan (NPS 2022b) were finalized in October 2022, and manage flights below 5,000 feet above ground level and adjacent to geographic features within the park up to 0.5 mile into adjacent lands. These plans includes the identification of fixed-wing and helicopter routes that

cross the northern portion of BENM near Dead Horse Point, Beef Basin within the northern portion of BENM, and a series of routes radiating out from NBNM, which may result in increased noise levels along these routes as aircraft approach Canyonlands National Park and NBNM.

3.4.13.2. ENVIRONMENTAL CONSEQUENCES

3.4.13.2.1. Issue

- How would proposed management actions under the alternatives affect natural quiet soundscapes?

3.4.13.2.2. Impacts Common to All Alternatives

The protection, preservation, and enhancement of BENM's natural soundscapes would vary among the alternatives, but all alternatives include collaboration with the BEC informed by Traditional Indigenous Knowledge. All alternatives include management associated with noise-producing activities, including BMPs to reduce noise levels. For analysis and comparison of alternatives, management associated with OHV use, aircraft takeoff and landing areas, and drone use was compared to identify areas closed to these noise-producing uses and, where allowed, the potential impacts to natural soundscapes. Table 3-63 identifies the acres under all alternatives, by existing noise threshold, where OHV use would be prohibited. Alternatives with more acres closed to OHV use, associated with each existing sound level, indicate that the management actions under those alternatives would result in fewer impacts to soundscapes and further protection of the soundscapes in these areas, including existing very quiet areas (less than 25 dBA). Table 3-63 also includes the percentage of each existing noise threshold protected by prohibiting OHV use, reducing potential additional noise in the landscape. This analysis did not consider the extent of OHV use in these areas, but instead focuses on the extent of protection of soundscapes through closing areas to OHV. Each alternative also identifies specific direction for drone use and where small, fixed-wing aircraft can take off and land. Based on these differences in management under each alternative, the following descriptions focus on the effects on soundscape associated with different management. BMPs associated with all alternatives (see Appendix G) identify the establishment of quiet hours at developed campgrounds, resulting in a reduction of potential intermittent noise associated with those recreation uses, such as generators.

Impacts to soundscapes from scenic overflights and drones in flight would occur under all alternatives. Additionally, because the BLM and USDA Forest Service do not have the ability to restrict travel on rural highways (e.g., Utah State Routes 95 and 211), noise generated along these travel corridors would continue under all alternatives; this would continue affecting BENM soundscapes in relation to those corridors.

Table 3-63. Existing Modeled L50 Sound Levels (A-weighted decibels) and Areas Closed to Off-Highway Vehicle Use to Protect Soundscapes by Alternative

Alternative	Less than 25 dBA (acres) (percentage of total area)	25–30 dBA (acres) (percentage of total area)	More than 30 dBA (acres) (percentage of total area)
Alternative A	194,031 (51%)	240,542 (22%)	1,502 (4%)
Alternative B	194,031 (51%)	365,134 (34%)	7,755 (23%)
Alternative C	210,955 (56%)	445,613 (41%)	7,755 (23%)
Alternative D	310,562 (82%)	661,815 (61%)	10,537 (32%)
Alternative E	194,031 (51%)	368,478 (34%)	7,755 (23%)

Sources: BLM and USDA Forest Service GIS (2022); NPS (2021).

3.4.13.2.3. Impacts under Alternative A

Existing trends for soundscapes would continue under Alternative A. The management of soundscapes in BENM would continue as outlined in the 2020 ROD/MMPs with the application of BMPs established in the RMP for those areas within the 2020 Planning Area to reduce the proliferation of noise-producing facilities and activities within BENM, which could affect BENM objects, including those associated with recreational values as well as culturally affiliated Tribes' cultural practices requiring quiet. (Note, these BMPs are only associated with the 2020 Planning Area, and a similar level of protection would not occur in areas managed under the 2008 Moab RMP, 2008 Monticello RMP, or 1986 Manti-La Sal LRMP, as amended). Increasing use along primary and secondary travel routes are assumed to continue, resulting in the areas adjacent to these routes becoming less quiet over time. Additionally, the use of OHVs in limited use areas, as well as the ability to use drones in most locations within BENM, could continue to result in increased noise levels when and where these uses occur. Table 3-63 identifies the acres under Alternative A, by existing noise threshold, where OHV use would be prohibited resulting in protection of soundscapes from potential noise associated with OHV use in these areas.

Alternative A identifies two specific airstrips where landing or takeoff of aircraft would be allowed with exceptions for filming permits. Additional new backcountry airstrips could be designated under this alternative with implementation-level planning. Under a filming permit, Alternative A would allow landing or takeoff of aircraft outside of WSAs or designated wilderness, leading to increased noise in BENM soundscapes during takeoffs and landings outside of these designated areas. Alternative A includes additional criteria for filming permits to avoid impacts on soundscapes from aircraft in areas with high recreational use and within 0.5 mile of designated campgrounds during high levels of use. By limiting aircraft to specific airstrips and including additional criteria for filming permits, this alternative would seek to protect BENM soundscapes from increased noise from these activities. This alternative does not limit drone use, which could lead to increased noise levels during use as well as when flying at low altitudes over BENM.

Management for vegetation, forestry and woodlands, lands and realty, livestock grazing, range improvements, fire management, recreation, and transportation could result in direct and indirect impacts to natural soundscapes through the use of vehicles and motorized equipment during construction or maintenance activities associated with Alternative A. Specifically, approximately 735,000 acres would be open to ROW authorization, approximately 928,000 acres managed as OHV limited, approximately 716,000 acres open for wood product harvest, and approximately 1,225,000 acres available for livestock grazing. These uses could result in short-term impacts to soundscapes, especially where located in proximity to very quiet areas (less than 25 dBA). The effects on soundscapes in WSAs and other areas managed for wilderness values would be limited because existing protections in these areas limit the use of motorized equipment.

3.4.13.2.4. Impacts under Alternative B

Existing soundscapes would be more protected under Alternative B than under Alternative A because the BMPs designed to protect natural soundscapes would be applied to the entire BENM instead of being limited to the smaller 2020 Planning Area. Existing trends for soundscapes would continue under Alternative B with the proposed soundscape management plan identifying methods to mitigate effects associated with trends and specific effects on soundscapes in BENM. This would include inventorying and monitoring soundscapes in collaboration with the BEC.

Table 3-63 identifies the acres under Alternative B, by existing noise threshold, where OHV use would be prohibited; this highlights the intended protection of soundscapes with approximately

131,000 additional acres being protected from potential noise from OHV use under this alternative compared to Alternative A.

Alternative B identifies that aircraft would be limited to the same two airstrips as Alternative A. Under this alternative, additional case-by-case landings and takeoffs at backcountry airstrips could be authorized in the future, including airstrips in Dry Fork Canyon, Mule Canyon, and other locations in BENM associated with the Utah Back Country Pilot's Association proposal. Through formal permitting processes, landings and takeoffs at these other locations could occur on a case-by-case basis but only if the use is beneficial to protecting BENM objects, potentially limiting their effect on natural soundscapes. Impacts from aircraft associated with filming permits would be similar to Alternative A. By limiting drones to take off or land only on routes designated in a manner that allows for such use in a TMP, Alternative B would facilitate further protection of soundscapes throughout BENM compared to Alternative A, by focusing drone use where other human-generated noise would occur. Additionally, under this alternative, drone landings and takeoffs within 300 feet of developed recreation facilities would be prohibited, further protecting soundscapes adjacent to these recreation areas, compared with Alternative A, which does not prohibit this use.

Impacts to soundscapes associated with management for vegetation, lands and realty, livestock grazing, range improvements, fire management, recreation, and transportation would be less intense than those associated with Alternative A. This is partly due to more areas being designated as a ROW avoidance or exclusion, reducing potential short-term noise during construction of utility projects, as well as less area being available for livestock grazing and reducing potential noise associated with construction and maintenance of range improvements, in addition to further limiting the use of vehicles and motorized equipment by closing more areas to OHV use. Based on the designation of ROW open areas along highways in BENM (approximately 5,000 acres), increased short-term noise could occur along these travel routes during the construction of utility projects but would be less extensive than under Alternative A. Increases in areas open for wood product harvest (an additional 215,000 acres) compared to Alternative A could result in increased and more widespread noise levels during those activities compared to Alternative A.

3.4.13.2.5. Impacts under Alternative C

Existing soundscapes would be more protected under Alternative C than under Alternative A because the BMPs designed to protect natural soundscapes would be applied to the entire BENM instead of being limited to the smaller 2020 Planning Area. Existing trends for soundscapes would continue under Alternative C with the proposed soundscape management plan identifying methods to mitigate effects associated with trends and specific effects on soundscapes in BENM. This would include inventorying and monitoring soundscapes in collaboration with the BEC.

Table 3-63 identifies the acres under Alternative C, by existing noise threshold, where OHV use would be prohibited; this highlights the intended protection of soundscapes with approximately 228,000 additional acres being protected from potential noise from OHV use under this alternative compared to Alternative A.

Alternative C identifies that aircraft would be limited to the same two airstrips as Alternative A. No new landing or takeoff locations could be identified except through formal permitting processes, with designation of additional landing and takeoff locations occurring on a case-by-case basis but only if the use is beneficial to protecting BENM objects, further protecting BENM objects under this alternative. Through the prohibition of public drone takeoff and landings within BENM, Alternative C would facilitate further protection of soundscapes, compared with Alternative A, by allowing drone use only if permitted through formal authorization and only when it would be beneficial to protecting BENM objects. Additionally, because aircraft and drones would not be allowed for

commercial filming permits, there would be a reduction in impacts to soundscapes under this alternative during filming activities compared to Alternative A.

Impacts to soundscapes associated with management for vegetation, lands and realty, livestock grazing, range improvements, fire management, recreation, and transportation would be less intense than those associated with Alternative A. This is partly due to the entire BENM being designated as either ROW exclusion or avoidance, reducing potential noise during construction of utility projects, as well as less area being available for livestock grazing, reducing potential noise associated with range improvements, in addition to further limiting the use of vehicles and motorized equipment by closing more areas to OHV use. Increases in areas open for wood product harvest compared to Alternative A (an additional 215,000 acres) could result in more widespread, increased noise levels during these activities, but by allowing less mechanical vegetation treatments under Alternative C, overall potential noise impacts would be reduced compared to Alternative A.

3.4.13.2.6. Impacts under Alternative D

Existing soundscapes would be more protected under Alternative D than under Alternative A because the BMPs designed to protect natural soundscapes would be applied to the entire BENM instead of being limited to the smaller 2020 Planning Area. Existing trends for soundscapes would continue under Alternative D, with the proposed soundscape management plan identifying methods to mitigate effects associated with trends and specific effects on soundscapes in BENM. This would include inventorying and monitoring soundscapes in collaboration with the BEC.

Table 3-63 identifies the acres under Alternative D, by existing noise threshold, where OHV use would be prohibited; this highlights the intended protection of soundscapes with approximately 547,000 additional acres being protected from potential noise from OHV use under this alternative compared to Alternative A, including where existing noise levels are very quiet (below 25 dbA).

Alternative D identifies that aircraft would be limited to the same two airstrips as Alternative A. No new landing or takeoff locations could be identified except through formal permitting processes with designation of additional landing and takeoff locations occurring on a case-by-case basis but only if the use is beneficial to protecting BENM objects, further protecting BENM objects under this alternative. Through the prohibition of public drone takeoff and landings within BENM, Alternative D would facilitate further protection of soundscapes, compared with Alternative A, by allowing drone use only if permitted through formal authorization and only when it would be beneficial to protecting BENM objects. Additionally, because aircraft and drones would not be allowed for commercial filming permits, there would be a reduction in impacts to soundscapes under this alternative compared to Alternative A.

Impacts to soundscapes associated with management for vegetation, lands and realty, livestock grazing, range improvements, fire management, recreation, and transportation would be less intense than those associated with Alternative A. This is partly due to the entire BENM being designated as either ROW exclusion or avoidance, reducing potential noise during construction of utility projects, as well as less area being available for livestock grazing, reducing potential noise associated with construction and maintenance of range improvements, in addition to further limiting and the use of vehicles and motorized equipment by closing more area to OHV use. Increases in areas open for wood product harvest compared to Alternative A (additional 215,000 acres) could result in more widespread, increased noise levels during these activities, but by allowing less mechanical vegetation treatments under Alternative D, overall potential noise impacts would be reduced compared to Alternative A.

3.4.13.2.7. Impacts under Alternative E

Existing soundscapes would be more protected under Alternative E than under Alternative A because the BMPs designed to protect natural soundscapes would be applied to the entire BENM instead of being limited to the smaller 2020 Planning Area. Existing trends for soundscapes would continue under Alternative E with the proposed soundscape management plan identifying methods to mitigate effects associated with trends and specific effects on soundscapes in BENM. This would include inventorying and monitoring soundscapes in collaboration with the BEC.

Table 3-63 identifies the acres under Alternative E, by existing noise threshold, where OHV use would be prohibited; this highlights the intended protection of soundscapes with approximately 134,000 additional acres being protected from potential noise from OHV use under this alternative compared to Alternative A.

Alternative E identifies that aircraft would be limited to the same two airstrips as Alternative A. No new landing or takeoff locations could be identified except through formal permitting processes with designation of additional landing and takeoff locations occurring on a case-by-case basis but only if the use is beneficial to protecting BENM objects, further protecting BENM objects under this alternative. Through the prohibition of public drone takeoff and landings within BENM, Alternative E would facilitate further protection of soundscapes, compared with Alternative A, by allowing drone use only if permitted through formal authorization and only when it would be beneficial to protecting BENM objects. Additionally, because aircraft and drones would not be allowed for commercial filming permits, there would be a reduction in impacts to soundscapes under this alternative compared to Alternative A.

Under Alternative E, the BLM and USDA Forest Service would collaborate further with the BEC to survey existing impacts to soundscapes and identify those that damage or degrade culturally affiliated Tribes' cultural practices requiring quiet. Based on this additional level of collaboration with the BEC, impacts to soundscapes potentially affecting traditional Indigenous practices would be reduced where identified by the BEC under this alternative compared to Alternatives A, B, C, and D.

Impacts to soundscapes associated with management for vegetation, lands and realty, livestock grazing, range improvements, fire management, recreation, and transportation would be less intense than those associated with Alternative A. This is partly due to the entire BENM being designated as either ROW exclusion or avoidance, reducing potential noise during construction of utility projects, less area being available for livestock grazing and wood product harvest reducing potential noise associated with construction and maintenance of range improvements and wood harvesting, in addition to further limiting the use of vehicles and motorized equipment by closing more areas to OHV use.

3.4.13.2.8. Cumulative Impacts

The cumulative impacts analysis area for natural soundscapes corresponds to the Planning Area and the area within 3 miles of the Planning Area. Past and present actions in the cumulative impacts analysis area that have adversely affected and would likely continue to adversely affect natural soundscapes include recreation uses (e.g., OHVs or generators at recreation sites); air travel, including scenic overflights; travel along primary and secondary corridors; and drone use for recreational and scientific purposes as described in the Affected Environment. Based on future increases in population and visitation to the Planning Area, increasing vehicle noise along State Route 95, State Route 211, and other public roads within the Planning Area would be anticipated.

Additionally, RFFAs and conditions (see Appendix J), including new water wells and range improvement projects; construction of new or expanded recreation facilities; and road construction projects, including the Goosenecks Campground and Trails, Hamburger Rock Campground Improvements and Expansion, San Juan Bridge Repair, and Cottonwood Wash Bridge Replacement, would generate additional noise during their construction and operation in and adjacent to BENM. The rehabilitation of the Dark Canyon South Landing Strip could result in elevated noise levels adjacent to this site during takeoff and landings due to potential increased use of this previously unimproved backcountry airstrip.

Implementation of air tour management plans for adjacent NPS units could result in increased, additive noise along the periphery of BENM, where BENM is within 0.5 mile of Glen Canyon, Canyonlands National Park, and NBNM. The Canyonlands Air Tour Management Plan (NPS 2022a) identified fixed-wing and helicopter routes that cross the northern portion of BENM near Dead Horse Point and Beef Basin; this could result in potential increased noise in these areas near Canyonlands National Park during scenic overflights. Similarly, the Natural Bridges Air Tour Management Plan (NPS 2022b) identified a series of fixed-wing and helicopter routes that radiate from NBNM, resulting in a potential increase in noise in this portion of BENM during scenic overflights.

3.4.14. Air Quality

Air quality is measured by the concentration of air pollutants and air quality–related values such as visibility and atmospheric deposition within a geographic area. Ecological factors such as wind, temperature, humidity, geographic features, vegetation, and wildfire, as well as human-related activities such as recreation and livestock grazing, have the potential to affect air quality.

Air quality indicators include criteria and hazardous air pollutants (HAPs), sulfur and nitrogen compounds, and methane, which could contribute to visibility impairment and atmospheric deposition. National and state ambient air quality standards set the maximum thresholds for criteria air pollutants and the federal Prevention of Significant Deterioration program establishes allowable increases of a given pollutant for Class I and II areas of interest that are identified by their designated land management agencies.

The Clean Air Act included legislation to prevent future visibility impairment and to remedy visibility impairment in Class I areas. Class I air quality areas include national parks larger than 6,000 acres and wilderness areas larger than 5,000 acres that existed or were authorized as of August 7, 1977. They receive the highest degree of air quality protection under the Clean Air Act. Class I areas included in the analysis area are Canyonlands National Park and Arches National Park (NPS 2022a). Areas of Utah not designated as Class I are classified as Class II. For Class II areas, greater incremental increases in ambient pollutant concentrations are allowed, as a result of controlled growth.

The air quality analysis area includes the Planning Area and any Class I areas within 62 miles (100 kilometers) (Canyonlands National Park), which is considered the distance where adverse air quality impacts (including reduced visibility and environmental damage) would occur (EPA 1992). Federal agencies are required to manage air quality according to established allowable increases of a given pollutant for Class I and II areas, discussed in more detail below under Visibility.

Air quality is considered to be a key component of health by all Tribes represented by the BEITC; clean air is part of an overarching Earth stewardship that is part of all Indigenous traditions (see Appendix L). From a Hopi perspective, a perspective shared by all Tribes of the BEITC, humans are

responsible for air quality, and if there is corruption in any way, the Earth will react to humans in a detrimental manner (see Appendix L).

3.4.14.1. AFFECTED ENVIRONMENT

3.4.14.1.1. Criteria Air Pollutants

The EPA, in accordance with the 1963 Clean Air Act, as amended, has established national ambient air quality standards (NAAQS) for six air pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO₂), ozone, particulate matter (both particulate matter less than 10 microns in diameter [PM₁₀] and particulate matter less than 2.5 microns in diameter [PM_{2.5}]), and sulfur dioxide (SO₂). NAAQS include primary standards established to protect public health, including the sensitive populations (e.g., children, the elderly, or asthmatics), and secondary standards to provide public welfare protection, including protection against decreased visibility and damage to the environment (e.g., crops, vegetation, animals, buildings). Table 6.14-1 of the 2022 AMS shows current NAAQS for the EPA-designated criteria pollutants.

The Clean Air Act requires EPA to periodically review and update NAAQS, as necessary, to ensure they adequately protect public health and the environment. Based on the latest health data and scientific evidence, the EPA has proposed to revise the primary (health-based) annual PM_{2.5} standard from its current level of 12 micrograms per cubic meters to a level¹² between 9 to 10 micrograms per cubic meters (EPA 2023a). The Clean Air Scientific Advisory Committee, which was established under the Clean Air Act to provide independent advice to the EPA on the technical bases for NAAQS, has recommended lowering the ozone standard to a level between 0.055 and 0.060 parts per million from its current EPA standard of 0.070 parts per million (Clean Air Scientific Advisory Committee 2023). Although the EPA previously suggested that the current standard of 0.070 parts per million is adequate, it has decided to initiate a new review of the ozone NAAQS to reflect the latest science and consider the advice and recommendation of the Clean Air Scientific Advisory Committee.

The Utah Division of Air Quality (UDAQ) is responsible for regulating air quality in Utah, including ensuring compliance with the NAAQS within Utah. The UDAQ emphasizes air quality monitoring in more developed areas of the state, where nonattainment of NAAQS is more problematic. There is only one UDAQ-operated air monitoring station near the Planning Area; this station monitors ozone in the town of Escalante in Garfield County (UDAQ 2022). Monitors recently installed in Moab, Utah, will provide NO₂, PM_{2.5}, and ozone data near the Planning Area. In Canyonlands National Park, federal agencies collect data related to pollution concentrations, visibility (via IMPROVE [Interagency Monitoring of Protected Visual Environment] monitors), and atmospheric deposition (via NADP [National Atmospheric Deposition Program] monitors).

The EPA, in collaboration with state, local, and Tribal agencies, compiles a National Emissions Inventory every 3 years. The criteria pollutant emissions (those compounds for which pollution criteria have been established) in tons per year from the most recent (2020) National Emissions Inventory¹³ (EPA 2023b) are shown in Table 3-64. Although there is no NAAQS for volatile organic compounds (VOCs), they contribute to ozone formation in the atmosphere. The existing air quality in the Planning Area is typical of undeveloped regions in the western United States. County-level

¹² Based on the Clean Air Scientific Advisory Committee's recommendation, the full range of values considered is between 8 and 11 micrograms per cubic meters. The EPA has emphasized comments and feedback on values between 9 and 10 micrograms per cubic meters.

¹³ First released version of the 2020 National Emissions Inventory.

information is being used to describe the airshed air quality. San Juan and Garfield Counties are currently designated attainment/unclassifiable for all criteria air pollutants.

Table 3-64. 2020 Emissions Inventory by Source (tons per year)

County	Source	CO	Nitrogen Oxides	PM ₁₀	PM _{2.5}	Sulfur Oxides	VOCs
San Juan	Crop and livestock dust	—	—	919	179	—	—
	Construction dust	—	—	9	1	—	—
	Paved road dust	—	—	116	29	—	—
	Unpaved road dust	—	—	2,896	288	—	—
	Prescribed fire	659	15	72	61	7	157
	Wildfire	574	14	64	54	6	137
	Other	7,389	1,644	131	111	37	20,520
	Total	8,622	1,673	4,207	723	50	20,814
Garfield	Crop and livestock dust	—	—	326	66	—	—
	Construction dust	—	—	20	2	—	—
	Paved road dust	—	—	60	15	—	—
	Unpaved road dust	—	—	1,367	136	—	—
	Prescribed fire	24	1	3	2	0	6
	Wildfire	95	1	10	8	1	22
	Other	4,232	837	34	29	2	15,651
	Total	4,351	839	1,820	258	3	15,679

Source: EPA (2023b).

Note: — = not applicable.

As shown in Table 3-64, the main source of PM_{2.5} and PM₁₀ in the Planning Area counties was from unpaved roads followed by dust from agricultural sources such as crop and livestock sources. In Garfield County, unpaved roads produced 75% of PM₁₀ emissions and 53% of PM_{2.5} emissions, whereas crop and livestock dust made up 18% of PM₁₀ emissions and 26% of PM_{2.5} emissions. In San Juan County, unpaved roads produced 69% of PM₁₀ emissions and 40% of PM_{2.5} emissions, whereas crop and livestock dust made up 22% of PM₁₀ emissions and 25% of PM_{2.5} emissions. Prescribed fires produced 1% of CO and PM_{2.5} emissions and 7% of SO₂ emissions in Garfield County and 8% of CO and PM_{2.5} emissions and 13% of SO₂ emissions in San Juan County. Wildfires produced 2% of CO emissions, 3% of PM_{2.5} emissions, and 22% of SO₂ emissions in Garfield County and 7% of CO and PM_{2.5} emissions and 12% of SO₂ emissions in San Juan County.

Many VOCs are also HAPs. HAPs, also known as toxic air pollutants or air toxics, include 188 pollutants that are known or suspected to cause cancer and noncarcinogenic respiratory effects, as well as other serious health effects, such as reproductive effects or birth defects, and adverse environmental effects. The AirToxScreen¹⁴ tool, developed by the EPA, provides an estimate of ambient concentrations of air toxics and human health risks. This tool shows that in 2019, the total cancer risk from HAPs for San Juan and Garfield Counties was 11.04 and 10.15 in a million, respectively (AirToxScreen 2023), which are both below the threshold value of 100 in a million

¹⁴ <https://www.epa.gov/AirToxScreen/2019-airtoxscreen>

according to 40 CFR 300.430. The hazard index for noncancer respiratory risks in both counties was 0.1; values below 1.0 indicate that air toxics are unlikely to cause adverse noncancer health effects over a lifetime of exposure (AirToxScreen 2023). A summary of HAP emissions by source type is presented for each Planning Area county in Table 3-65, below.

Table 3-65. 2020 Hazardous Air Pollutant Emissions by Source (tons per year)

Year	Garfield County	San Juan County
Biogenics*	2,616	3,812
Prescribed fire	7	54
Wildfire	6	49
Oil and gas production	-	6
Total†	2,684	4,018

Source: EPA (2023b).

Note: - = no data.

* Vegetation and soils.

† Sum of emissions from sources shown may not add to total emissions. Total emissions include other sources that are not shown.

CO is produced by the incomplete burning of various fuels, including coal, wood, charcoal, oil, kerosene, propane, and natural gas. Products and equipment powered by internal combustion engines such as portable generators, cars, heavy construction equipment, OHVs, airplanes, and trains also produce CO. CO combines with oxygen in the atmosphere to create carbon dioxide. High concentrations of CO reduce oxygen in the blood stream and can prevent oxygen from reaching critical organs like the heart and the brain. At very high concentrations (typically indoors), CO can cause dizziness, confusion, unconsciousness, and death. CO can also combine with oxygen in the atmosphere to create carbon dioxide (a greenhouse gas [GHG]). In the Planning Area counties, biogenic sources are the largest emitters of CO (71% and 48% of total CO emissions in San Juan and Garfield Counties, respectively) (see Table 3-64). San Juan County produces much larger CO emissions from oil and gas sources (over 500 short tons per year compared with nearly 0 emissions in Garfield County).

Nitrogen oxides (NO_x) are emitted through the use of nitrogen fertilizers, certain industrial and waste management processes, and when fuel burns at high temperatures, such as in internal combustion engines. NO_x can have both health and environmental impacts. Short-term exposures to high concentrations of NO₂ (indicator for NO_x compounds) can aggravate respiratory diseases, particularly asthma, although long-term exposures may contribute to the development of asthma and potentially increased susceptibility to respiratory infections. NO_x can also react with other chemicals in the air to form particulate matter and ground-level ozone, as well as acid rain. Nitrate particles that are the result of NO_x also contribute to regional haze and visibility. In the Planning Area counties, biogenic, on-road mobile, and area sources are the largest contributor of total NO_x emissions (see Table 3-64).

SO₂ is formed by the oxidation of hydrogen sulfide. Oxidation occurs when hydrogen sulfide combines with the oxygen in air. Short-term exposures of SO₂ can damage the respiratory system and make breathing difficult. Sulfur oxides also react with other compounds in the atmosphere to create particulate matter. At high concentrations, sulfur oxides can damage foliage, decrease growth, and damage ecosystems by contributing to acid rain. Natural sources of SO₂ include volcanoes and hot springs. Human-made sources of SO₂ include fossil fuel processing and burning, with high-sulfur fuels generally producing higher levels of SO₂ as a byproduct. Sulfur oxide emissions are relatively small compared with the other criteria air pollutant emissions in the

Planning Area counties; nearly 50% of all sulfur oxide emissions in Garfield County and just over 50% of all sulfur oxide emissions in San Juan County come from oil and gas operations (see Table 3-64).

Although not a recognized air quality issue in the Planning Area, ground-level ozone and its precursors (VOCs and NO_x) are regional concerns and can be transported both into and out of the Planning Area. Under a new recommended standard for ozone by the Clean Air Scientific Advisory Committee, the current ozone concentration in many parts of western United States, including the Planning Area, would exceed the NAAQS. Ozone can inflame and damage human airways; cause coughing, difficulty breathing, and sore throat; make lungs more susceptible to infection; and aggravate asthma and other lung diseases.

Based on data collected by UDAQ in town of Escalante and by federal agencies at Canyonlands National Park, ozone concentrations show a relatively unchanging trend between 2012 and 2022. Table 3-66 shows the highest and fourth highest annual 8-hour ozone concentrations in the Planning Area between 2012 and 2022. According to the NAAQS, the fourth highest daily maximum 8-hour ozone concentration, averaged over 3 years, may not exceed 0.070 parts per million. The 3-year average of the fourth highest annual 8-hour ozone concentrations in the Planning Area ranged between 0.063 and 0.068 parts per million between 2012 and 2022. Estimates show that although recent regional ozone concentrations remain below the NAAQS, values are just below the current standards and historical data records show past exceedances (EPA 2023c).

Table 3-66. 8-Hour Ozone Concentration (parts per million)

Year*	Highest Annual Concentration	Fourth Highest Annual Concentration
2012	0.074	0.068
2013	0.072	0.067
2014	0.064	0.060
2015	0.073	0.068
2017	0.072	0.068
2018	0.077	0.068
2019	0.064	0.062
2020	0.062	0.060
2021	0.075	0.069
2022	0.068	0.063

Source: EPA (2023c).

Note: Data collected at UDAQ monitoring site in the town of Escalante in Garfield County.

* Ozone data for 2016 not available.

Particulate matter is another issue during dust storms or when kicked up from other activities in this dry region. Particulate matter (PM₁₀ and PM_{2.5}) concentrations are expected to be higher near towns, unpaved roads that experience high volumes of traffic, and areas with depleted vegetative cover. Regional levels are likely a result of fugitive dust sources. Fugitive dust is likely to occur naturally across the Planning Area during high-wind events. Areas such as dry lake beds, deserts, dunes, and recovering wildfire areas are prone to high-wind dust events. The BLM regularly authorizes projects that, without adequate mitigation measures applied, would have the potential to raise levels of fugitive dust, PM₁₀, and PM_{2.5}. Locations vulnerable to decreasing air quality due to particulate matter in the Planning Area include the immediate operation areas around surface-disturbing activities such as construction of major ROW projects. The primary source of particulate

emissions in the Planning Area Counties are reported from area sources (over 97% of PM₁₀ and 84% of PM_{2.5} emissions), which include the total from sources that range from prescribed fires to outdoor grilling and residential wood burning to trains.

Fugitive dust will also increase if climate change yields warmer and drier conditions. If, as some predict, increased precipitation accompanies climate change, the increase in precipitation might help to mitigate temperature increases, resulting in a reduced increase in fugitive dust. Warming temperatures and increasing drought conditions due to climate change create more favorable conditions for wildfires to occur. As wildfires become more frequent and severe, especially in the southwestern region, they will contribute to increased levels of all criteria air pollutants, especially CO.

Current trends suggest an increase in recreational activities and travel to the area. Some recreational visitors engage in motorized activities that represent emission sources in addition to the highway vehicles utilized for transportation. Additional concerns focus on livestock grazing and prescribed fire and wildfires and valid existing rights and ROW leases. Tribal Nations of the BEITC believe that mineral extraction activities related to oil and gas and extraction and transport of coal and uranium ore is detrimental to air quality (see Appendix L).

Prescribed and naturally caused fires present a concern to air quality. Short-term effects on air quality from prescribed fires include a general increase in particulate matter, carbon dioxide, and ozone precursor emissions. Any smoke emissions resulting from annual prescribed burning projects or treatments in the Planning Area are managed in compliance with guidelines in the Utah Smoke Management Plan and interagency group program (UDAQ 2021). Active group participants include various federal and state agency land managers, and UDAQ. The purpose of this program and the smoke management plan is to ensure the implementation of mitigation measures to reduce the impacts on public health and safety and visibility from prescribed fire and wildland fire used for resource benefits. Compliance with the plan is the primary mechanism for land managers to implement prescribed burns while ensuring compliance with the Clean Air Act. Burn plans written under this program include actions to minimize fire emissions, exposure-reduction procedures, a smoke dispersion evaluation, and an air quality monitoring plan. The program coordinator reviews proposed burns daily and approves or denies burns based on current weather and air quality conditions.

Projected future air quality conditions from these and other modeled sources are described in Section 3.4.12.2.8.

3.4.14.1.2. Visibility and Regional Haze

Visibility is “the clarity with which distant objects are perceived” (Federal Land Managers’ Air Quality Related Values Work Group 2010) and is affected by pollutant concentrations, plume impairment, regional haze, relative humidity, sunlight, and cloud characteristics. Although some visibility impairments are the result of natural, uncontrollable sources, such as windblown dust and soot from wildfires, human-caused sources of pollution can also impair visibility. The human-caused sources include prescribed fire, motor vehicles (organic carbon, dust resuspension), electric utility and industrial fuel burning (sulfates and particulate), and manufacturing operations (sulfates and fine particulate matter). In Canyonlands National Park, a typical visual range without any human-caused air pollutants is approximately 161 miles (Federal Land Managers’ Air Quality Related Values Work Group 2010).

Aerosols (small particles made of solid and/or liquid molecules dispersed in the air) are the pollutants that most often affect visibility in the Class I areas. Five key contributors to visibility

impairments are sulfate, nitrate, organic carbon, elemental carbon, and crustal materials. Visibility in the area is most influenced by sulfates, nitrates, and organic carbon.

Visibility can be expressed in terms of deciviews, a measure for describing perceived changes in visibility. One deciview is defined as a change in visibility that is just perceptible to an average person or equivalent to an approximately 10% change in light extinction. To estimate potential visibility impairment, monitored aerosol concentrations are used to reconstruct visibility conditions for each day monitored. These daily values are then ranked from clearest to haziest and divided into three categories to indicate: the average visibility for all days; the 20% of days with the clearest visibility (clearest days); and the 20% of days with the worst visibility (haziest days). Under the 2017 Regional Haze Rule revisions, the EPA proposed visibility tracking of the most impaired days to better characterize visibility conditions and trends. The most impaired days are those with the most impairment from human-caused sources while the haziest grouping now better represents days with haze from natural sources. Total haze on the most impaired days is used to track progress toward Regional Haze Rule goals. Comparing trends in the 20% haziest days with the 20% most impaired days provides a method to assess impacts from episodic events, like wildfires, which have greatly affected visibility throughout the western United States in recent years.

The Clean Air Act visibility goal requires visibility improvement on the haziest days, with no degradation on the clearest days. The EPA monitors the visibility in Canyonlands National Park through the IMPROVE program that monitors visibility in Class I areas. The IMPROVE monitoring station in Canyonlands National Park is located at the Islands in the Sky Park entrance, approximately 1 mile west of Indian Creek in the north (NPS 2022b). The Western Regional Air Partnership, in a collaborative effort with state and federal agencies and Tribal Nations, has developed a tool to identify sources and causes of regional haze at all Class I areas in the western United States (EPA 1992). In addition to visibility trends in Canyonlands National Park, this model provides projections modeled for the year 2028.

According to these data, the 5-year average (2014–2018) visibility on the haziest days has improved by 23% compared with the 2000 to 2004 5-year average and 17% compared with the 2008 to 2012 5-year average (NPS 2022c). On the clearest days, the 2014 to 2018 5-year average visibility has improved by 70% compared with the 2 previous years' 5-year averages (EPA 1992). This decrease is primarily due to a decrease in nitrate and sulfate extinction from human-caused sources (EPA 1992). Based on modeled projection for 2028, the visibility trend would be expected to continue and be on track to meeting 2060 visibility goals in Canyonlands National Park (EPA 1992).

3.4.14.1.3. Atmospheric Deposition

Atmospheric deposition refers to the processes by which air pollutants are removed from the atmosphere and deposited on terrestrial and aquatic ecosystems. It is reported as the mass of material deposited on an area (kilogram per hectare) per year. Atmospheric deposition can cause acidification of lakes and streams. One expression of lake acidification is change in acid neutralizing capacity, the lake's capacity to resist acidification from atmospheric deposition. Acid neutralizing capacity is expressed in units of micro-equivalents per liter.

Wet deposition refers to air pollutants deposited by precipitation, such as rain and snow. One expression of wet deposition is precipitation pH, a measure of the acidity or alkalinity of the precipitation. There are five National Atmospheric Deposition Program stations in Utah: Logan, Murphy Ridge, Green River, Bryce Canyon National Park, and Canyonlands National Park. The National Atmospheric Deposition Program station in Canyonlands National Park has assessed precipitation chemistry since 1997.

Dry deposition refers to the transfer of airborne gaseous and particulate material from the atmosphere to the Earth's surface. The Clean Air Status and Trends network has measured dry deposition of ozone, SO₂, nitric acid, sulfate, nitrate, and ammonium in the United States since the late 1980s. The closest Clean Air Status and Trends network station to the Planning Area is located at Canyonlands National Park.

Total deposition refers to the sum of airborne material transferred to the Earth's surface by both wet and dry deposition. The primary gases involved with inorganic nitrogen deposition include ammonia, NO_x, and nitric acid, and the primary particles are nitrate and ammonium. Agricultural sources are the most common source of ammonium. Total nitrogen deposition is calculated by summing the nitrogen portion of wet and dry deposition of nitrogen compounds, and total sulfur deposition is calculated by summing the sulfur portion of wet and dry deposition of sulfur compounds.

Total deposition has been measured at Canyonlands National Park from 2011 through 2020 (NPS 2022c). Total nitrogen deposition has ranged from 0.7 to 1.7 kilograms per hectare-year between 2011 and 2020. Total nitrogen deposition of 3 kilograms per hectare-year represents the total pollution loading where acidification is unlikely and "below which a land manager can recommend a permit be issued for a new source unless data are available to indicate otherwise" (Fox et al. 1989). Nitrate deposition to terrestrial systems can cause chemical alterations to soil, affecting microorganism and native vegetation. The trend at Canyonlands National Park shows improvement for sulfate concentrations between 2011 and 2020 (NPS 2022c).

In the Planning Area, accumulation of dust on snow is another form of deposition that can affect ecosystems. Dust deposition accelerates snowmelt. Dust deposition mostly occurs during the spring season (Skiles and Painter 2015). In the spring season as the weather becomes warmer and the rate of snowmelt increases, increased dust on snowpacks can further increase the rate at which snow melts. Changes in rate of snowmelt and thickness of late-season snowpack can impact water table and water availability, particularly in the late summer months or during droughts.

3.4.14.2. ENVIRONMENTAL CONSEQUENCES

3.4.14.2.1. Issues

- How would proposed management actions and management prescriptions contribute to air pollutant emissions and affect air quality and visibility?

3.4.14.2.2. Impacts Common to All Alternatives

In general, management activities that involve fuel-burning equipment and vehicles or result in surface disturbance would result in emissions of air pollutants (criteria air pollutants and HAPs) and fugitive dust in the Planning Area. Under all alternatives, agencies would manage emissions to protect air quality and air quality-related values such as visibility and ensure compliance with state and federal air quality standards. Allocations within the Planning Area that have the potential to contribute to emissions involve livestock grazing, recreation and travel management, vegetation management, wildland fire and prescribed fire, forestry and woodlands, and wood gathering.

Recreation, Transportation, and Special Designations

Under the Alternatives, emissions from on-road and off-road vehicles would be a primary source of air pollutant emissions in the Planning Area. Direct impacts from recreation and travel management in the Planning Area include exhaust emissions from vehicles, OHV use (e.g., all-

terrain vehicles [ATVs] or utility task vehicles [UTVs], aircraft,¹⁵ and motorcycles), and fuel-burning equipment involved in road and facility maintenance and construction projects. Recreation and travel management are sources of particulate emissions from motorized travel on unpaved roads and trails and smoke from open-flame burning, such as from campfires. Road construction and maintenance activities would also temporarily (during construction) result in local increases in concentrations of air pollutants; however, all such activities would have appropriate measures (such as dust abatement) as part of the permit or contract to reduce impacts on air quality. Under all alternatives, the demand for recreation and OHV use is expected to continue to grow, resulting in increased recreation and travel-related emissions.

In addition to the direct impacts described above, recreation and travel management can have indirect impacts on air quality from windblown erosion caused by disturbance to vegetation and soils and from unpaved roads and trails. Damage to vegetation and increased soil erosion contributes to an increase in “frequency of dust storms” (see Appendix L), during particularly dry seasons or extended periods of drought. Furthermore, an increase in soil erosion would result in increased dust accumulation on snow, which as explained in Section 3.4.14.1.3, would increase the spring-time snowmelts, affecting water resources and late-season availability.

Prescribed Fire and Vegetation Treatments

Vegetation management would involve a variety of treatment methods, including mechanical and prescribed fire treatments. Each of these treatment methods would result in short-term, direct impacts on air quality through the emission of criteria air pollutants from equipment use, vehicular travel on unpaved roads to access the planned vegetation management activity, and prescribed fire, with the greatest emissions occurring from prescribed fire. Heavy equipment or off-road vehicles such as mowers, masticators, or plows would contribute air pollutants at a greater rate, compared with hand-held equipment such as chain saws used for manual treatments. Treatments that uproot vegetation, such as tilling or harrowing, could have indirect impacts by exposing soils to windblown erosion, which creates dust and contributes to particulate matter emissions. Treatments that reduce vegetation height but leave the roots intact would have a lesser potential for indirect impacts.

Use of prescribed fires for restoration creates smoke (particulate matter) and other criteria air pollutants and HAPs. Smoke and PM_{2.5} emissions depend strongly on fuel type and density as well as burning conditions (Jaffe et al. 2020). Prescribed fire is regulated by the state through the Utah Smoke Management Program. This program limits the conditions and timing under which prescribed fire can occur; therefore, complying with these provisions would ensure that prescribed fire treatments would continue to minimize air quality impacts on downwind locations under all alternatives.

Vegetation management that decreases woody plants and increases grasses and forbs could reduce impacts on air quality from wildfire by changing composition of and/or decreasing fuel loads. Concentrations of PM_{2.5} from prescribed fires are estimated to be smaller in magnitude and shorter in duration than hypothetical scenarios or actual wildfires. This can be attributed to the small size of each prescribed fire and the meteorological characteristics of the days during which the prescribed fires occurred. Well-designed prescribed fires that are targeted for specific locations can potentially reduce the size and resulting air quality and public health impacts of future wildfires (EPA 2021). Maintaining or restoring vegetation communities would have indirect, long-term impacts to the extent that vegetation management creates more resilient vegetation communities that are less prone to wildfire.

¹⁵ Generally fixed-wing aircraft and helicopters as well as remotely operated aircraft.

Livestock Grazing

Sources of air pollutants in the Planning Area from livestock management activities include emissions from vehicles and equipment utilized during range maintenance and improvement projects (e.g., reservoir maintenance or fence construction or maintenance), and seasonal transportation of livestock. On-road and off-road equipment and vehicles emit criteria air pollutants and HAPs and create localized dust from surface disturbance or travel on unpaved roads. Livestock are a major source of methane emissions in the Planning Area; therefore, methane which is a precursor to ozone, is another air quality impact of livestock grazing.

Movement of livestock across the Planning Area, particularly during dry conditions, can create short-term, localized dust as livestock cross unvegetated surfaces and dirt trails. Grazing can also affect vegetation cover and soil conditions, which could indirectly affect air quality from windborne dust generation of disturbed surfaces. However, grazing would not be considered a surface-disturbing activity under proper livestock management, and the agencies, under all alternatives and in collaboration with the BEC, would manage grazing to maintain healthy vegetation and restore soils, such that under all alternatives, any disturbance and its associated impacts on air quality are minimized. Livestock grazing is a concern of the Tribal Nations of the BEITC. The region within and around the Planning Area has historically been used for grazing, which can impact cultural values and objects of Proclamations 9558 and 10285, including air quality (see Appendix L).

Under all alternatives, lands covered by grazing permits or leases voluntarily relinquished by existing holders would be retired from livestock grazing in accordance with Proclamation 10285. As permits and leases are voluntarily relinquished over time, emissions from livestock grazing activities would decrease, as the demand for maintenance projects and transportation of livestock would be eliminated.

Minerals

Under Presidential Proclamation 10285, subject to valid existing rights, BENM is withdrawn from all forms of mineral entry, location, selection, sale, leasing, or other disposition. Furthermore, there are no active or producing mineral leases or salable mineral pits in the Decision Area. Therefore, no current or future emissions from leasable or salable mineral activities is anticipated under any of the alternatives.

Uranium is a concern for the Tribal Nations of the BEITC. The region within and around Planning Area is rich in uranium, and Tribes are concerned about past, present, and future radioactive contamination from uranium extraction and contamination of air quality with the transport and dusting of uranium ore using Monument roads (see Appendix L). Although there are active uranium and vanadium mining claims on BLM-administered mineral estate in the Planning Area there is no current production in BENM and no emissions or radiation from these operations are anticipated under any of the alternatives. The main air quality concern is from Technologically Enhanced Naturally Occurring Radioactive Material,¹⁶ which would be mitigated through proper reclamation.

¹⁶ Naturally occurring radioactive materials that have been concentrated or exposed to the accessible environment as a result of human activities such as manufacturing, mineral extraction, or water processing. Naturally Occurring Radioactive Material may contain any of the primordial radioactive elements, including uranium. "Technologically enhanced" means that the radiological, physical, and chemical properties of the radioactive material have been concentrated or further altered by having been processed, or beneficiated, or disturbed in a way that increases the potential for human and/or environmental exposures (EPA 2008).

Any potential impacts to air quality would be possible beneficial impacts from reclamation of abandoned and improperly plugged wells and would not vary by alternative.

Forestry and Woodlands

Timber management, under all alternatives, would be used as appropriate to protect BENM objects. Although the Planning Area would not be suited for timber production, authorizations for private use of wood products, consistent with the availability of wood products and protection of other resources, would continue to be issued to the public. Therefore, timber and wood product harvest activities would continue to result in emissions from equipment operation and surface-disturbing activity. Private timber harvest activities that occur under issued authorizations are difficult to quantify, and these emissions are much lower compared with motorized recreation, visitation, vegetation management, and prescribed fire emissions. Therefore, impacts from forestry and woodlands management are discussed qualitatively.

Impacts can also be the result of prescribed fire or mechanical treatments that may be used where harvest is impractical, or demand does not exist. Indirect effects on air quality would occur to the extent that removed products are combusted for wood-burning purposes. Emissions from burning wood that is collected in BENM would primarily occur downstream and outside of the Planning Area. Beneficial impacts would include a reduction of emissions from wildfires, which would result from a reduction of fuel loads and biomass.

3.4.14.2.3. Impacts under Alternative A

Under Alternative A, the agencies would continue to manage air quality and resources that impact air quality under current management directions of the 2020 ROD/MMPs, the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP. Under these guidelines, the current air quality and visibility trends would continue, as described under Affected Environment. Management direction described in Section 3.5.5 would ensure that BLM and USDA Forest Service would continue to authorize activities that do not contribute to the degradation of air quality in the Planning Area. Table 3-67 shows the total annual criteria air pollutant and HAP emissions from quantifiable sources in the Planning Area under Alternative A. Potential impacts from emissions not quantified (e.g., from minerals or forestry and woodlands management decisions) are discussed qualitatively. According to these estimates, prescribed fire and vegetation treatments would continue to contribute approximately half of particulate matter emissions, over 94% of VOCs, and 98% of HAPs. Recreation and travel management would continue to contribute approximately the remaining half of particulate matter emissions and 61% of NO_x emissions. Annual criteria air pollutant and HAP emissions estimates from livestock grazing activities are minor compared with emissions from recreation and travel management and prescribed fires and vegetation treatments.

Table 3-67. Annual Criteria Air Pollutant and Hazardous Air Pollutant Emissions by Source (short tons per year)

Source	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOCs	HAPs
Livestock grazing	<0.001	<0.001	0.4	0.05	<0.001	0.02	0.002
Prescribed fires and vegetation treatments	109	1.1	347.4	59.07	0.6	25.35	2.534
Recreation and travel management	26	1.7	336.0	67.82	0.1	1.53	0.048
Total	135	2.8	683.9	126.95	0.7	26.89	2.584

Note: Emissions inventory was prepared in coordination with BLM resource specialists and based on existing historical data indicative of existing management activities under current directions (Alternative A).

Under Alternative A, emissions from increased travel to and within the Planning Area would continue to increase, as described in Section 3.4.14.2.2. Localized impacts on air quality from OHV use would continue along designated routes where such use occurs, including within the 928,080 acres where OHV travel is allowed but limited to designated routes. Under Alternative A, 436,075 acres (32% of the Planning Area) would remain closed to OHV travel, where impacts to air quality would not be expected.

Under Alternative A, ongoing emissions would occur from recreation site maintenance and development of new sites, facilities, or trails. Encouraging the location of recreational activities near population centers and highways corridors would concentrate air quality impacts of recreation in these areas while minimizing impacts in other locations in the Planning Area.

Under Alternative A, impacts from vegetation management and prescribed fires would continue at their current levels (see Table 3-67). Under Alternative A, although existing levels of vegetation treatments may increase above current values, individual vegetation treatments and prescribed fire activities would only impact the air quality of the treatment area or its general vicinity. Alternative A would continue to prioritize vegetation management in wildland-urban interface (WUI) and developed recreation areas, temporarily increasing emissions at or near the treatment area. Long-term improvements to vegetation conditions and soils that would occur because of treatment would reduce emissions from potential wildfire or dust emissions. The long-term impacts on air quality from individual treatment types would be as described in Section 3.4.14.2.2.

Under Alternative A, emissions from livestock grazing activities would continue at their current levels as listed in Table 3-67 or decrease over time if future voluntary relinquishment of permits and leases occurred as described in Section 3.4.14.2.2. Emissions from individual range improvement projects would continue to result in short-term increases in pollutant concentrations near the project site; however, Alternative A, which would continue to allow development of off-site water sources, would increase livestock distribution, which could reduce surface disturbance from congregating livestock over time, and reduce particulate matter and dust emissions in the Planning Area.

Under Alternative A, emissions from timber harvest would continue at their current levels based private use in the Planning Area, and commercial harvest that may occur on NFS lands. This includes emissions from OHV emissions from travel on designated routes for wood gathering as well as possible impacts from cross-country OHV travel that would continue to be allowed (determined based on soil and vegetation monitoring) under Alternative A. Localized impacts that could occur from increased emission concentration during logging activities would be limited to 762,369 acres (56% of the Planning Area) that would continue to remain open to wood product harvest activities.

3.4.14.2.4. Impacts under Alternative B

Under Alternative B, the agencies would manage resources, including air quality, using a landscape-wide approach. In collaboration with the BEC, Tribal Nations, local and county government, and surrounding communities, the agencies would manage emissions and discretionary actions in the Planning Area to enhance air quality, maintain wilderness character for designated wilderness, and to protect BENM objects. Management direction described in Section 3.5.5 would focus on collaborative approaches to managing air quality, including using Traditional Indigenous Knowledge and techniques. Through this collaboration, agencies may be able to more effectively manage air quality and resources that impact air quality on a landscape-wide scale, which could reduce potential emissions and enhance air quality compared with Alternative A. For example, the BEC and Tribal Nations would advise the agencies on fuel treatment timing to ensure that

treatments occur during the appropriate season and under appropriate meteorological conditions minimize air quality impacts and identify treatment priorities with the goal of improving vegetation conditions to minimize uncharacteristic fire risk and associated emissions.

Under Alternative B, 566,627 acres (42% of the Planning Area) would be closed to OHV use (10% more than under Alternative A). In the remainder of the Planning Area, OHVs would be limited to designated routes. In areas closed to OHVs, direct emissions from OHVs would be eliminated. As demand for recreational use of OHVs is expected to be the same as under Alternative A, closure of 10% more acres to OHV use would likely result in displaced emissions or increased concentrations of pollutants along designated routes, where OHV use is permitted.

Under Alternative B, emissions from construction and maintenance of recreational facilities would be similar to Alternative A. Targeted recreation of Alternative B would result in fewer acres of surface disturbance across the Planning Area, which could reduce particulate emissions in the long term. To the extent that these allocations could increase the concentration of recreational activity near developed areas, pollutant concentrations would be expected to increase in those areas and may decrease in other parts of the Planning Area.

Under Alternative B, vegetation management and prescribed fires would be implemented with the goal of returning to the natural fire return intervals and historical conditions. Under this approach, short-term impacts on air quality from prescribed fire and fire managed to meet resource objectives could increase compared with Alternative A to the extent that such fires were conducted with more frequency. As described in Section 3.4.14.2.2, such fires would be subject to the Utah Smoke Management Plan, which would minimize air quality impacts on downwind locations. Using a landscape-wide approach for restoring natural fire return intervals and improving vegetation conditions would have indirect, long-term effects to the extent that it created more resilient vegetation communities that are less prone to wildfire when compared with Alternative A.

Under Alternative B, emissions from livestock grazing activities would continue at their current levels or decrease over time if future voluntary relinquishment of permits and leases occurred as described in Section 3.4.14.2.2. Under Alternative B, the same number of AUMs and head months (HMs) as under Alternative A would result in the same amount of emissions from range improvement projects. Existing and new water development and rangeland improvement projects would occur if consistent with protection of BENM objects. It is difficult to predict if this would increase or decrease the number of future projects. An increased focus on drought mitigation under Alternative B could reduce indirect impacts on air quality to the extent that grazing use was altered during times of drought. Loss of soil moisture coupled with grazing use can increase disturbed areas that are susceptible to windblown soil erosion. Therefore, Alternative B could reduce disturbed areas and indirectly improve air quality compared with Alternative A.

Under Alternative B, localized impacts that could occur from increased air pollutant concentration during logging activities would be limited 61% of the Planning Area. This would be an area larger by 10% compared with Alternative A and could reduce air quality impacts by increasing distribution of activity and reducing localized concentrations.

3.4.14.2.5. Impacts under Alternative C

Under Alternative C, the agencies would manage resources, including air quality, using a landscape-wide collaborative approach. Through this collaboration with the BEC, Tribal Nations, local and county government, and surrounding communities, agencies may be able to more effectively manage air quality and resources that impact air quality on a landscape-wide scale which could result in enhanced air quality compared with Alternative A.

Under Alternative C, 664,030 acres (49% of the Planning Area) would be closed to OHV use (17% more than under Alternative A). In the remainder of the Planning Area, OHV use would be limited to designated routes. In areas closed to OHV use, direct emissions from OHVs would be eliminated. As demand for recreational use of OHVs is expected to be the same as under Alternative A, closure of 17% more acres to OHV use would likely result in displaced emissions or increased concentrations of pollutants along designated routes, where OHV use is permitted.

Alternative C places more limitations on new facility placement and could result in a reduction of emissions from construction of new recreational facility, particularly fugitive dust emissions during surface disturbance.

Under Alternative C, impacts from management actions for vegetation management and prescribed fires would use a landscape-wide approach for restoring natural fire return intervals and improving vegetation conditions. This would have indirect, long-term effects to the extent that it created more resilient vegetation communities that are less prone to wildfire when compared with Alternative A. Under Alternative C, chaining would not be allowed. Although this would eliminate emissions from heavy equipment during treatment, emissions may be replaced from other types of mechanical treatments that may result in fewer, the same, or higher direct emissions, depending on the equipment used, type of fuel, and hours of operation.

Under Alternative C, impacts from livestock grazing would continue at their current levels or decrease over time if future voluntary relinquishment of permits and leases occurred as described in Section 3.4.14.2.2. Under Alternative C, the same number of AUMs and HMs as under Alternative A would result in the same amount of emissions from range improvement projects; however, under Alternative C, new water development and range improvements would be allowed only for the primary purpose to protect BENM objects. This may reduce the frequency of such projects and the overall emissions from these activities compared with Alternative A.

Under Alternative C, localized impacts that could occur from increased air pollutant concentration during logging activities would be limited 68% of the Planning Area. This would be an area larger by 22% compared with Alternative A and could reduce air quality impacts by increasing distribution of activity and reducing localized concentrations.

3.4.14.2.6. Impacts under Alternative D

Under Alternative D, the agencies would manage resources, including air quality, using a landscape-wide collaborative approach, which may allow the agencies to more effectively manage air quality and resources that impact air quality on a landscape-wide scale, which could result in enhanced air quality compared with Alternative A.

Under Alternative D, 982,914 acres (72% of the Planning Area) would be closed to OHV use (40% more than under Alternative A). Under Alternative D, with the majority of the Planning Area closed to OHVs, total emissions in the Planning Area based on vehicle miles traveled may be reduced; however, as the demand for recreational use of OHVs is expected to be the same as under Alternative A, closure of 40% more acres to OHV use would likely result in displaced emissions or increased concentrations of pollutants along designated routes or to locations outside of the Planning Area that are part of the same airshed.

Alternative D places more limitations on recreation facility maintenance and would not allow new recreation facilities to be developed unless specifically necessary to protect BENM objects. This could result in a reduction of emissions from construction of new recreational facilities and maintenance of existing facilities compared with Alternative A.

Under Alternative D, impacts from management actions for vegetation management and prescribed fires would also use a landscape-wide approach for restoring natural fire, which would have indirect, long-term effects to the extent that it created more resilient vegetation communities that are less prone to wildfire when compared with Alternative A.

Under Alternative D, a 9% reduction of AUMs and a 25% reduction of HMs would result in 12% fewer emissions from range improvement projects.¹⁷ Under Alternative D, new water development and range improvements would be prohibited, which would reduce air quality impacts compared with Alternative A.

Under Alternative D, localized impacts that could occur from increased air pollutant concentration during logging activities would be limited to 68% of the Planning Area. This would be an area larger by 22% compared with Alternative A and could reduce air quality impacts by increasing distribution of activity and reducing localized concentrations.

3.4.14.2.7. Impacts under Alternative E

Under Alternative E, additional emphasis would be placed on the use of Traditional Indigenous Knowledge and techniques in addition to Best Available Control Technology, emission controls, and site-specific mitigation measures, as appropriate. Through this approach, agencies may be able to more effectively manage air quality and resources that impact air quality on a landscape-wide scale over the longer term. Compared with Alternative A, this could improve air quality in the Planning Area.

Under Alternative E, 569,971 acres (42% of the Planning Area) would be closed to OHV use (10% more than under Alternative A). Because the demand for recreational use of OHVs is expected to be the same as under Alternative A, impacts to the air quality within the Planning Area airsheds may be similar to those under Alternative A, from displaced emissions.

Under Alternative E, existing developed recreation facilities would be maintained as needed to address visitor impacts and critical resource protection needs, and developed recreation facilities would be removed if inconsistent with the need to protect BENM objects. This would result in a long-term reduction in maintenance-related emissions compared with Alternative A.

Under Alternative E, impacts from management actions for vegetation management and prescribed fires would use a landscape-wide approach for restoring natural fire return intervals and improving vegetation conditions. This would have indirect, long-term effects to the extent that it created more resilient vegetation communities that are less prone to wildfire when compared with Alternative A. Under Alternative E, mechanical treatments would not be used except when necessary to protect BENM objects. By prioritizing natural processes, emissions from prescribed fire may be greater than under Alternative A and the other alternatives to the extent that prescribed fire occurred more frequently. As described in Section 3.4.14.2.2, such fires would be subject to the Utah Smoke Management Plan, which would minimize air quality impacts on downwind locations.

Under Alternative E, impacts from livestock grazing activities would continue at their current levels or decrease over time if future voluntary relinquishment of permits and leases occurred as described in Section 3.4.14.2.2, or if permits and leases were withheld, suspended, or cancelled due to noncompliance. Under Alternative E, the same number of AUMs and HMs as under Alternative A would result in the same amount of emissions from range improvement projects.

¹⁷ Note to reviewers: We are still waiting on data for allocated AUMs for Alternative D, so the discussion in this section includes placeholders. Once the data have been received, this section will be revised and finalized

Under Alternative E, no new water developments would be allowed, and range improvements would be allowed only if needed to protect BENM objects. This would result in a reduction in emissions from these activities compared with Alternative A. Alternative E would further reduce the potential for emission of fugitive dust by emphasizing grazing management that reduces impacts from soil erosion and by requiring a formal drought management plan that is based on best available science and Traditional Ecological Knowledge specific to the region. As described under Alternative B, a focus on drought mitigation under Alternative B could reduce indirect impacts on air quality to the extent that resource use was altered during times of drought. Loss of soil moisture coupled with surface-disturbing uses activities such as grazing use can increase disturbed areas that are susceptible to windblown soil erosion.

Under Alternative E, localized impacts that could occur from increased air pollutant concentration during logging activities would occur anywhere logging activities would occur; however, under this alternative, air quality impacts could be reduced through consultation with Tribes and a more holistic approach as well as by increasing distribution of activity and reducing localized concentrations.

3.4.14.2.8. Cumulative Impacts

The cumulative impact analysis area for air quality is the Planning Area counties and any sensitive Class I areas within approximately 62 miles of the Planning Area (i.e., Canyonlands National Park). Past and present actions that contribute air pollutant emissions include ongoing vegetation treatments and prescribed fires; commercial and noncommercial harvest of wood products; roads, trails, and recreational facility construction and maintenance; and rangeland maintenance and improvement projects, in and outside of the Planning Area, as well as any present mining development and production activities on adjacent or nearby lands. Impacts from these types of sources are expected to continue and contribute to the cumulative air quality impacts in the Planning Area (see Appendix J).

Reasonably foreseeable vegetation treatments and prescribed fires within (e.g., North Elk Ridge Forest Health Project or Shay Mesa Project) and outside (e.g., Cactus Park Project) the Planning Area would have short-term air quality impacts similar to those described in Section 3.4.14.2.2 but on a wider geographic scale. Road and trail, recreational facility, and rangeland maintenance projects (such as drilling water wells), both in and outside of the Planning Area, would increase surface disturbance that can contribute to the creation of windborne fugitive dust. Those projects include the temporary access road to state land (UTU-96194), the ROW UTU-96101 for geotechnical test boreholes, water tank and associated pipeline for culinary water use, East League livestock water wells (DOI-BLM-UT-Y020-2020-0037-CX), Flats water wells and Kane Gulch fence, Cave Canyon water wells, Red Canyon water wells, Beef Basin and Dark Canyon Plateau range improvements, and the North Cottonwood toilet construction and installation. These activities also contribute criteria pollutant and HAP emissions, some of which contribute to the formation of ozone. Wood burning in the area, including from material harvested in the Planning Area, can contribute to poor air quality in winter months due to inversion conditions that trap pollutants closer to the ground. Other RFFAs that would contribute to cumulative air quality impacts include the Gooseneck, Hamburger Rock, House on Fire Trailhead, and Indian Creek Allotment Range Improvements projects. In addition, an increasing trend in recreation (including OHV use) and travel to the area is expected to continue to grow.

Emissions from BLM- and USDA Forest Service–managed activities within BENM are relatively small compared with regional emissions, and current and future air quality within BENM would continue to be driven predominantly by cumulative sources in and outside of the Planning Area. Potential changes in air quality from cumulative sources were presented in the BLM’s Western

United States Photochemical Air Quality Modeling study (Ramboll 2023), which modeled the effects of anticipated future oil, gas, and coal development; other human-caused (anthropogenic) emissions; and natural sources on air quality and air quality related values (visibility and deposition) for the year 2032. Based on this modeling study, air pollutant concentrations in San Juan County and Canyonlands National Park are projected to be below the current NAAQS for all criteria pollutants in 2032 (Table 3-68), with some exceedances of the PM₁₀ and 24-hour PM_{2.5} NAAQS in other portions of Utah due to wildfires.

Table 3-68. 2032 Ambient Air Quality Estimates, Western United States Photochemical Air Quality Modeling Study

Pollutant	Averaging Time	Estimated Modeled Range (Utah)	Estimated Modeled Range (San Juan County)	NAAQS
CO	8 hour	0.1 to 5	0.1 to 1	9 ppm
CO	1 hour	0.1 to 11 ppm	0.1 to 3 ppm	35 ppm
NO ₂	1 hour	<1 to 50 ppb	<1 to 10 ppb	100 ppb
NO ₂	Annual	<1 to 17 ppb	1 to 5 ppb	53 ppb
Ozone	8 hour	55 to 65 ppb	55 to 60 ppb	70 ppb
PM ₁₀	24 hour	1 to 225 µg/m ³	1 to 30 µg/m ³	150 µg/m ³
PM _{2.5}	24 hour	2 to 42 µg/m ³	2 to 4 µg/m ³	12 µg/m ³
PM _{2.5}	Annual	<1 to 5 µg/m ³	<1 to 2 µg/m ³	35 µg/m ³
SO ₂	1 hour	<1 to 10 ppb	<1 to 5 ppb	75 ppb

Source: Ramboll (2023).

Note: ppb = parts per billion; ppm = parts per million; µg/m³ = micrograms per cubic meter.

The primary sources of each criteria pollutant would vary by pollutant. For ozone, the largest percentage of the pollutant concentration originates from sources outside of Utah. Within the state, the largest contributors to ozone are non-oil, gas, and coal-related anthropogenic sources (described as other anthropogenic sources) and natural sources. For NO₂, the largest contributions are due to other anthropogenic sources followed by natural sources, coal combustion in electrical generating units, wildfires, and federal oil and gas development sources outside Utah. For PM_{2.5}, the largest contributors are wildfires, other anthropogenic sources, and sources originating outside of Utah, whereas the largest contributors of PM₁₀ are wildfires and other anthropogenic sources. For SO₂, the largest contributions are due to wildfires, followed by other anthropogenic source group and coal combustion from electrical generating units (Ramboll 2023). Federal and non-federal oil and gas development both within and outside of Utah are also cumulative contributors of criteria pollutant emissions, but to a lesser degree than the other sources described above. Air quality improvements have partially occurred due to the work of the Four Corners Air Quality Group, which conducts air quality monitoring, dispersion modeling, air quality planning, compliance and enforcement, permits, and smoke management programs.

The regional air study also modeled nitrogen and sulfur deposition and visibility. Cumulative annual nitrogen deposition in Utah varies between 0.6 and 4.5 kilograms nitrogen per hectare (kg N/ha), with values of 4 kg N/ha or below in San Juan County. In general, the largest contributors to nitrogen deposition are other anthropogenic sources followed by boundary conditions, natural source groups and wildfires. Cumulative annual sulfur deposition in Utah varies between 0.01 and 1.1 kilograms sulfur per hectare (kg S/ha), with values of 0.5 kg S/ha or below in San Juan County. In general, the largest contributors to sulfur deposition are other anthropogenic sources followed by coal combustion in electrical generating units, sources outside of Utah, and wildfires. Nitrogen and

sulfur deposition in Canyonlands National Park were below their respective critical loads. Visibility at Canyonlands National Park was modeled at 0.22 deciviews on the 20% clearest days and 4.24 deciviews on the 20% most impaired days. The visibility design values for the most impaired days are projected to be below the uniform rate of progress toward the 2064 visibility goals (Ramboll 2023).

Among the alternatives, Alternative A would contribute the most emissions to the cumulative air quality impacts from recreation and transportation, vegetation treatments and prescribed fire, and livestock grazing management activities, particularly if any concurrent activities occur. Alternatives D and E would decrease emissions within the Planning Area due to the closure of 75% of the Monument to OHV use; the cumulative effect would depend on the extent to which these activities were reduced rather than simply displaced in the Planning Area. The management actions under all alternatives would also contribute to short-term cumulative effects from surface-disturbing activities, particularly during concurrent project activities, specifically those that result in fugitive dust emissions. Over the long term, the action alternatives would have countervailing effects through vegetation management and fire and fuels management, which is expected to reduce the risk of large, uncontrolled wildfires that contribute significantly to local and regional air quality.

3.4.15. Night Skies

3.4.15.1. AFFECTED ENVIRONMENT

The dark night sky resources of BENM are included in the Monument's original designation proclamation (Proclamation 9558), which Proclamation 10285 confirms, restores, and supplements, and was described this way: "The star-filled nights and natural quiet of the Bears Ears area transport visitors to an earlier eon. Against an absolutely black night sky, our galaxy and others more distant leap into view."

As identified in the 2022 BEITC LMP, each Tribe has formed deep, ancestral connections to the night sky such that, "there is consensus [amongst the Hopi, Zuni, Navajo, and Utes] that the night sky in open spaces should be protected in order to preserve these ancestral connections" (see Appendix L:25).

In response to increased interest from the public regarding protection of dark night skies, the BLM has developed Technical Note 457 – Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-administered Land (BLM 2023). This technical note provides a background on night sky values and terminology, types of potential effects resulting from increased light pollution, and comprehensive technical guidance on practical methods for reducing the impacts from artificial outdoor lighting associated with proposed projects (or activities), including the identification of specific BMPs. Although this technical note provides BMPs to reduce impacts to dark night skies, it does not represent BLM policy for the management of dark night skies. The USDA Forest Service has not yet developed policies regarding the management of dark night skies.

In 2017, the Ogden Valley Chapter of the International Dark-Sky Association measured on-ground readings of existing light pollution levels from five locations within BENM (Newspaper Rock, Dugout Ranch, Butler Wash Ruins, Mule Canyon Indian Ruins, and Bears Ears Buttes), which revealed that BENM is one of the most naturally dark outdoor spaces of its size left in the lower 48 states (Ogden Valley International Dark-Sky Association Chapter 2017). According to *The New World Atlas of Artificial Night Sky Brightness* (Falchi et al. 2016), large portions of the Monument have pristine night skies where the only natural sources of light, such as starlight, airglow, aurora, and zodiacal light, are visible to the human eye. Ground measurements of zenith (directly above observers) sky

luminance (brightness) in BENM supported this conclusion with mean zenith luminance as low as 21.9 magnitudes per square arcsecond (mpsa) (Dugout Ranch) and 21.8 mpsa (Newspaper Rock), comparable to the lower limit of 21.9 to 22.0 mpsa established by natural night sky phenomena. Additionally, only 30.4% of the land area of the United States experiences this degree of natural darkness on a regular basis, much of which is in the state of Alaska (Falchi et al. 2016). The routinely seen “pristine” night skies in the Monument are a testament to the rarity of these conditions. On-the-ground readings of sky luminance were taken from five locations in and adjacent to BENM. Appendix A, Figure 3-35, Dark skies: light pollution, shows these locations, and Table 3-69 depicts these readings. Dark night skies contribute to the qualities of wilderness characteristics within BENM, including naturalness, outstanding opportunities for solitude and primitive, unconfined recreation, and supplemental values associated with cultural resources. For more detail on the existing wilderness characteristics in BENM, refer to Section 3.4.7.

Table 3-69. Baseline Night Sky Quality Reading Locations – Existing Sky Luminance

Site Name	Sky Luminance Average (mpsa)
Newspaper Rock	21.788
Dugout Ranch (Nature Conservancy)	21.904
Butler Wash Ruins	21.648
Mule Canyon Indian Ruins	21.622
Bears Ears	21.532

Source: Ogden Valley International Dark-Sky Association Chapter (2017).

Note: Higher numbers correspond to more pristine night skies.

Table 3-69 depicts the acres of BENM where different thresholds of existing sky glow currently exist. The associated Bortle Scale classes are also noted for each existing sky glow level (the ratio of artificial sky brightness to natural sky brightness); these classes are defined as follows:

- Bortle Class 1: Excellent dark-sky site with pristine dark skies where the Milky Way and stars cast shadows with many deep sky objects being visible with the naked eye
- Bortle Class 2: Typical truly dark-sky site where the background sky has a slightly gray shade due to atmospheric scattering or distant airglow on the horizon, where some deep sky objects are visible with the naked eye
- Bortle Class 3: Some evidence of light pollution is evident, clouds appear faintly illuminated near the horizon with the Milky Way still appearing complex with a few deep sky objects being visible with the naked eye

Table 3-70 and Appendix A, Figure 3-35, Dark skies: light pollution, displays different thresholds of existing sky glow areas within the boundaries of BENM.

Table 3-70. Existing Sky Glow (ratio of artificial sky brightness to natural sky brightness) Acres

Ratio of Artificial Sky Brightness to Natural Brightness (Bortle Class)	Acres
0–0.01 (Bortle Class 1)	1,202,548
0.01–0.02 (Bortle Class 2)	117,375
> 0.02–0.04 (Bortle Class 2)	28,192
> 0.04–0.08 (Bortle Class 2)	9,346
> 0.08–0.16 (Bortle Class 3)	5,554

Source: Falchi et al. (2016).

Note: Higher numbers correspond to locations with increased light pollution.

Development in the western United States is projected to continue to increase in the coming decades. BENM is not located in proximity to any cities or large towns, with the closest communities under 10,000 in population. These communities include Blanding, Monticello, Moab, and Page, Arizona. The nearest large metropolitan areas are Las Vegas, Nevada, at approximately 275 straight miles to the southwest and Salt Lake City, Utah, at approximately 200 straight miles to the north-northwest. Increasing development typically results in increased levels of sky glow, so additional sky glow from peripheral and adjacent development areas is likely to be detected within BENM. With increasing development throughout the western United States, it is anticipated that light pollution would continue to increase in the periphery of the Monument with further encroachment of sky glow into the edges of the Monument.

Utah surpassed Texas in 2015 with more International Dark-Sky Association dark sky designations than any other state. To date, Utah has 23 dark sky designations. BENM is surrounded by several designations protecting night skies at a variety of scales, such as the recent designation of Goosenecks State Park as well as NBNM, Rainbow Bridge National Monument, Canyonlands National Park, Dead Horse Point State Park, and others.

Gateway communities to areas with dark night skies are seeing increasing visitation and economic development opportunities associated with astrotourism, such as dark sky festivals hosted by national parks in the region. Such activities are currently hosted in the Bryce Canyon National Park area to the west and the area around Page, Arizona, to the south. The City of Moab, Grand County, and the Town of Bluff, Utah, have passed ordinances that seek to protect against light pollution.

Night sky resources are increasingly of public concern and were noted during scoping for planning efforts and review of proposed projects on BLM-administered lands. At least two BLM national monuments (GSENM and BENM) recognize dark night skies as objects for protection in their Proclamations.

Outside BENM, the town and cities on the immediate periphery (e.g., Monticello, Blanding, Bluff, and Mexican Hat, Utah), as well as those farther away like Salt Lake, Utah, and Las Vegas, Nevada, are anticipated to continue to expand with residential, commercial, and industrial development and associated artificial lighting. This growth is forecasted to increase the encroachment of sky glow into the edges of the Monument. Public concerns for protecting dark sky resources on BLM-administered lands are projected to continue and increase based on existing trends.

3.4.15.2. ENVIRONMENTAL CONSEQUENCES

3.4.15.2.1. Issue

- How would proposed management actions under the alternatives affect dark night skies?

3.4.15.2.2. Impacts Common to All Alternatives

The protection of dark night skies would vary among the alternatives based on differing management approach. All alternatives include collaboration with the BEC informed by Traditional Indigenous Knowledge. Each alternative identifies areas where permanent night lighting would be restricted and prohibited, resulting in different extents of protection under each alternative, as shown in Table 3-71. Additionally, Table 3-72 compares (by alternative) the areas where permanent lighting would be prohibited in context with existing sky glow thresholds to identify the extent of protection for BENM dark night sky resources. The prohibition of permanent night lighting would result in further protection of dark night sky resources, compared to where lighting would be restricted, as the BMPs designed to restrict permanent night lighting could still result in some additional light pollution spillover where new lighting would be installed where not prohibited by the

BLM or USDA Forest Service. By reducing or avoiding sources of light pollution through BMPs or lighting restrictions within BENM, the BLM and USDA Forest Service seek to manage night skies to maintain visible clarity of astronomical phenomena and ensure a natural dark environment for wildlife and people.

Management for lands and realty, recreation, and transportation could result in direct and indirect impacts on dark night sky resources. Vehicle headlights and recreation users could introduce local light pollution along motorized travel routes and non-motorized trails where these uses occur. Additionally, during the construction phase of lands and realty actions, there could be additional light pollution during any night construction activities requiring illumination of work areas. Long-term impacts from lands and realty actions on dark night skies would be minimized through the application of BMPs from BLM Technical Note 457- Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Land (BLM 2023).

Because the BLM and USDA Forest Service do not have the ability to restrict or prohibit lighting on non-federal lands, impacts to dark night skies from adjacent communities would occur regardless of the alternative selected.

Table 3-71. Areas Where Permanent Lighting would be Restricted and Prohibited

Alternative	Areas with Lighting Restrictions (Acres)	Areas where Lighting is Prohibited (Acres)
Alternative A	216,498	12,392
Alternative B	18,153	1,346,619
Alternative C	17,577	1,347,195
Alternative D	543	1,364,355
Alternative E	0	1,363,014

Source: BLM and USDA Forest Service GIS (2022).

Table 3-72. Existing Sky Glow and Areas Where Permanent Lighting is Prohibited

Alternative	0–0.01 (Bortle Class 1)	0.01–0.02 (Bortle Class 2)	> 0.02–0.04 (Bortle Class 2)	> 0.04–0.08 (Bortle Class 2)	> 0.08–0.16 (Bortle Class 3)
Alternative A	12,392	0	0	0	0
Alternative B	1,190,276	113,313	27,477	9,356	5,515
Alternative C	1,190,722	113,313	27,566	9,356	5,557
Alternative D	1,203,271	117,240	28,231	9,356	5,557
Alternative E	1,202,548	117,375	28,192	9,346	5,554

Sources: Falchi et al. (2016); BLM and USDA Forest Service GIS (2022).

3.4.15.2.3. Impacts under Alternative A

The 2020 ROD/MMPs identified a series of management strategies to minimize impacts to night skies, including no permanent lighting allowed in BLM VRM Class I areas (a total of 12,392 acres) and a lightscape management plan required where an extensive amount of long-term lighting is proposed. By prohibiting lighting in VRM Class I areas and including additional management strategies to limit effects of night lighting, Alternative A would protect large portions of BENM from increased adjacent light pollution within the 2020 Planning Area, which is considerably smaller than the current Planning Area. Note: this corresponds only to the 2020 Planning Area, and this

alternative would not provide the same level of protection for similarly allocated areas managed under the 2008 Moab RMP, 2008 Monticello RMP, or 1986 Manti-La Sal LRMP as amended. Based on the release of Technical Note 457 - Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Land (BLM 2023), similar management strategies and BMPs under this alternative would be applied during planning and design of projects (or other management actions) located on BLM-administered lands both within and outside of BENM, resulting in more protection of BENM dark night skies. The USDA Forest Service does not have a similar memorandum or technical direction for management of dark night skies.

Under Alternative A, night sky protections to prohibit permanent night lighting would cover 1% of the total BLM-administered portion of BENM and none of the NFS portion of BENM. As shown in Table 3-72, permanent lighting would be prohibited in Bortle Class 1 areas where VRM Class I areas were allocated under the 2020 ROD/MMPs, but this would protect less than 1% of Bortle Class 1 skies in BENM.

3.4.15.2.4. Impacts under Alternative B

Under Alternative B, similar management strategies and BMPs to minimize impacts to night skies as Alternative A were identified and are described in Impacts under Alternative A, including elements from BLM Technical Note 457. Additionally, compared to Alternative A, Alternative B expands the areas where no permanent lighting would be allowed to include BLM VRM Class I, BLM VRM Class II, USDA Forest Service Very High SIO, and USDA Forest Service High SIO, resulting in approximately 1,334,000 more acres protected from light pollution within BENM. This includes areas currently managed under the 2008 Moab RMP, 2008 Monticello RMP, or 1986 Manti-La Sal LRMP, where additional night sky protections as part of the 2020 ROD/MMPs would not be applicable under Alternative A.

As part of collaborating with the BEC, the BLM and USDA Forest Service would inventory and monitor dark night resources, culminating in a night skies management plan to mitigate effects from BENM uses, which is not included under Alternative A. Based on the expansion of areas where no permanent lighting would be allowed and through development of a night skies management plan, more of BENM's dark night skies would be protected under this alternative than under Alternative A. These night sky protections to prohibit permanent night lighting would cover 98% of the BLM-administered portion of BENM and almost 100% of the NFS portion of BENM; permanent lighting would be allowed on 9 acres within moderate SIO areas. Based on the extent of BENM where permanent lighting would be prohibited, as shown in Table 3-72, most of the Bortle Class 1 areas would be protected from adjacent light pollution, with large areas of Bortle Class 2 lands also being protected. This additional level of protection of dark night skies under Alternative B would allow for less sky glow within BENM compared to Alternative A, resulting in increased opportunities to view astronomical phenomena and ensure a natural dark environment for wildlife and people within BENM.

3.4.15.2.5. Impacts under Alternative C

Impacts to dark night skies under Alternative C would be the same as those described under Alternative B; except as noted in Table 3-72, more Bortle Class 1 and 2 areas would be protected because more of the BLM-administered portion of BENM would be managed under BLM VRM Class I and II, where permanent lighting would be prohibited. This would result in approximately 1,334,000 more acres being protected from light pollution within BENM under Alternative C compared with Alternative A.

3.4.15.2.6. Impacts under Alternative D

Impacts to dark night skies under Alternative D would be the same as those described under Alternative B; except as noted in Table 3-72, more Bortle Class 1 and 2 areas would be protected because more of the BLM-administered portion of BENM would be managed under BLM VRM Class I and II, where permanent lighting would be prohibited. This would result in approximately 1,352,000 more acres being protected from light pollution within BENM under Alternative D compared with Alternative A. Therefore, Alternative D would also allow for less sky glow within BENM compared to Alternative A, resulting in increased opportunities to view astronomical phenomena and ensure a healthy natural dark environment for wildlife and people within BENM.

3.4.15.2.7. Impacts under Alternative E

Impacts on dark night skies under Alternative E would be the same as those described under Alternative B, except that the BLM and USDA Forest Service would collaborate with the BEC to survey existing impacts to night skies and identify those that damage or degrade culturally affiliated Tribes' cultural practices requiring darkness. Based on this additional level of collaboration with the BEC, impacts to dark night skies potentially affecting traditional Indigenous practices would be reduced where identified by the BEC. Additionally, because all the BLM-administered portions of BENM would be managed under VRM Class I or VRM Class II, where permanent night lighting would be prohibited, 100% of the BLM portion of BENM would be protected from increased light pollution within BENM. The level of protection of dark night sky resources on the NFS portion of BENM would expand under this alternative to cover 100% of these lands since all NFS-administered portions of BENM would be managed under either a Very High or High SIO, where permanent night lighting would be prohibited. As shown in Table 3-72, all Bortle Class 1 and 2 areas would be protected from adjacent light pollution, by prohibiting permanent lighting. This would result in approximately 1,351,000 more acres of BENM being protected from light pollution within BENM under Alternative E compared with Alternative A.

Additionally, the BLM and USDA Forest Service would coordinate with the BEC to promote night sky resources with the goal of the program being to meet or exceed the standards for accreditation as an International Dark-Sky Associated International Dark Sky Place. Based on the additional status this program would grant BENM, there would be a potential increase in visitation and economic development opportunities associated with astrotourism to experience pristine night skies under this alternative compared to Alternative A.

3.4.15.2.8. Cumulative Impacts

The cumulative impacts analysis area for dark night skies corresponds to the Planning Area and adjacent communities producing sky glow in BENM. Past and present actions in the cumulative impacts analysis area that have and would likely continue to adversely affect dark night skies include artificial lighting associated with residential, commercial, and industrial developments including those located adjacent to BENM as described in Section 3.4.15.1. Towns and cities close to BENM, as well as those farther away (e.g., Salt Lake, Utah, and Las Vegas, Nevada), are anticipated to continue to grow and lead to further encroachment of sky glow into the edges of BENM. Additionally, RFFAs and conditions (see Appendix J), including new water wells and range improvement projects; construction of new or expanded recreation facilities; and road construction projects, including the Goosenecks Campground and Trails, Hamburger Rock Campground Improvements and Expansion, San Juan Bridge Repair, and Cottonwood Wash Bridge Replacement, could generate additional sky glow in and adjacent to BENM if lighting is proposed as part of these projects. Effects from these proposed improvements and facilities would be reduced through implementation of Technical Note 457's management strategies and BMPs.

3.5. Built Environment

As described in the 2022 BEITC LMP,

Native people have constructed culturally meaningful features on the land, often in the vicinity of notable natural landmarks. Archaeological sites, the physical remains of where people once lived, are found throughout the Bear's Ears region. All Tribal Nations that are part of the BEITC have always had respect for places that were used by all ancestors, regardless of whether there is a direct cultural affiliation to individual sites. (see Appendix L:20)

In addition to archaeological sites, other resources considered in this RMP/EIS are human constructs and for this reason they have been included in this section.

3.5.1. *Cultural Resource Management, Indigenous Peoples' Religious Concerns, and Tribal Use*

BLM policy, as detailed in Manual 8100 – The Foundations for Managing Cultural Resources, defines a cultural resource as “a definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups” (BLM 2004:2). This definition is further refined by stating, “Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit described in this Manual series. They may be but are not necessarily eligible for the National Register [of Historic Places]” (BLM 2004:2).

An indigenous perspective expands this definition of a cultural resource by including much of what Western science considers distinct natural resources. Cultural resources and natural resources are not two different categories according to indigenous cultures (see Appendix L:20). As stated in the 2022 BEITC LMP, “An individual depends on other living plants, animals, and surrounding land to survive; thus, the natural resources gathered, hunted, prayed to, and walked on becomes a cultural resource” (see Appendix L:20). Natural resources, cultural resources, and individual places across the landscape cannot be separated from the landscape as a whole and considered in isolation. From an indigenous perspective, the natural world is much more than just a physical realm to sustain the material needs of life. The 2022 BEITC LMP states, “The natural resources of the Bears Ears cultural landscape—water, land, wind, sound—are imbued by powerful religious, artistic, and other cultural meanings significant to Native communities with ancestral and present-day ties to this region” (see Appendix L:20).

3.5.1.1. **AFFECTED ENVIRONMENT**

More than a century of research in the Planning Area and the surrounding region has provided researchers with a wealth of information from a Western scientific perspective on the lifeways and cultural traditions of southeastern Utah. Traditional resources can include archaeological resources, structures, topographic features, habitats, plants, wildlife, and minerals that Indigenous peoples, Tribal Nations, or other groups consider essential for the preservation of traditional culture and traditional values. Traditional values of living communities can be manifested at locations called traditional cultural properties (TCPs), American Indian sacred sites, or cultural landscapes; however, there have not been comprehensive ethnographic studies to date of BENM for any of the Tribal Nations of the BEC. Although there are known and documented TCPs within Bears Ears, they

are outnumbered by known but undocumented TCPs. Importantly, cultural resources include places that do not meet the strict definition of a TCP but are nonetheless culturally significant to Tribal Nations or other groups. Much of the Traditional Indigenous Knowledge regarding culturally significant resources of the BENM region is kept and passed down from generation to generation through oral tradition. The summary of cultural resources, Indigenous peoples' religious concerns, and Indigenous use provided here is derived principally from the 2022 BEITC LMP.

In traditional indigenous worldviews, there is no distinction between cultural and natural resources. In traditional societies people depended directly on plants, animals, and the surrounding environment to survive; thus, these resources that are frequently classified by Western science as natural resources become cultural resources (see Appendix L). Accordingly, individual resource types cannot be considered separately from the landscape as a whole. Resources that are typically considered separately in a Western scientific perspective that are collectively considered cultural resources include viewsheds, air quality, night skies, water, wildlife, vegetation and woodland resources, geological resources, paleontology, and archaeological resources. The 2022 BEITC LMP presents detailed discussions of each of these cultural resources from multiple Tribal perspectives. These important summaries have been incorporated throughout this entire document into their respective resource sections to integrate these Traditional Indigenous Knowledge concepts more fully into a holistic understanding of the BENM resource landscape.

As noted above, specific culturally significant locations or geographies can be designated as TCPs. There are known TCPs within BENM, but there are likely substantially more such locations that have not been documented. Among the more substantial culturally significant geographies of the BENM area are the Bears Ears Buttes and Elk Ridge. According to Ute tradition, Bears Ears is the first place where bears come out of hibernation in the spring, and this observation is central to the Bear Dance. The Bear Dance is among the most significant ceremonies performed among Ute communities and is practiced to this day. Bears Ears Buttes are also culturally important, as they are the birthplace of Hastiin Ch'il Haajini, also known as Manuelito, who was a principal leader of the Navajo during the historical Long Walk period, which is the Tribal name for the forced removal of Navajo people from their homeland by the U.S. military from 1864 to 1866.

Much of the cultural significance of the BENM landscape is understood only through oral tradition that is maintained as Traditional Indigenous Knowledge through individual Tribal practices and religious ceremonies by Tribal cultural experts and knowledge holders. Many of these practices and religious ceremonies are sacred and are not shared outside of immediate Tribal communities. Accordingly, many of these practices and religious ceremonies have not been documented from a Western scientific perspective. Close coordination between federal land managers and the BEC on the development and implementation of management of BENM will allow for active and appropriate management of holistically defined cultural resources including cultural landscape use and its traditional cultural and religious underpinnings.

Oftentimes, maintaining confidentiality regarding traditional knowledge and important locations takes priority over specifically describing and identifying the locations of these resources. As a result, much information is unavailable for detailed analysis. Many of the sources of information noted above, such as oral tradition and Tribal ceremonies, that provide information on indigenous use and resources of importance to Tribes are considered confidential; however, through ongoing consultation and research, it is possible to broadly identify types of locations and resources within the Decision Area that are important to Tribes (see Appendix L), including the following:

- Water sources, notably springs and their associated plant communities, and other perennial and ephemeral water sources

- Landscape features, such as prominent outlooks, rock outcroppings, peaks, and plateaus, including views of and from these locations
- Plant and animal resources, including hundreds of various plants and animals, and their habitats

Traditional indigenous worldviews do not differentiate between the natural and cultural world. Accordingly, there is no distinction between natural resources and cultural resources. The 2022 BEITC LMP (see Appendix L:20) notes, “An individual depends on other living plants, animals, and surrounding land for subsistence and also to maintain cultural and religious ties to certain places with special value to Tribal Nations, such as BENM to survive; thus, the natural resources gathered, hunted, prayed to, and walked on becomes a cultural resource.” Because of the interconnectedness of the natural, cultural, and spiritual world within traditional indigenous worldviews, the entirety of the BENM landscape is herein considered a cultural resource. This includes the physical BENM landscape, traditional cultural uses of that landscape, and the spiritual connections between that are reflected in Tribal ceremonies and oral histories.

3.5.1.2. ENVIRONMENTAL CONSEQUENCES

3.5.1.2.1. Issues

- How would the proposed management affect continued traditional uses of religious or cultural importance to Tribal Nations?
- How would the BENM resource management plan affect cultural resources, including cultural landscapes, traditional uses, and historic properties?
- How would the BENM resource management plan provide information and education about cultural resources, including cultural landscapes, traditional uses, and historic properties, to the public?
- How would the BENM resource management plan affect uses of cultural resources?

Management actions that limit surface disturbance, such as those associated with water, soil, vegetation, and visual resources, would limit associated impacts to cultural resources. Conversely, management actions that allow surface disturbance, such as livestock grazing or granting of a ROW, would potentially subject cultural resources to impacts, although such impacts would be addressed at a project-specific implementation level. Management actions related to recreation, tourism, OHV use, and grazing have the greatest potential to affect cultural resources. Recreation and tourism are expected to increase regionally and to accordingly increase within BENM. Such increases in visitation would likely bring increased OHV use and associated access to more and more remote cultural resources. Additional visitation to these more remote locations would likely have an associated impact to these sites. Although sometimes it is not possible to determine specific impacts that would occur to important cultural resources due to the sensitive nature of their locations, it is reasonable to infer that where these activities are allowed, there is a greater potential for changes or impacts to such resources. Accordingly, the analyses that follow use simple acreage of allowed/restricted uses and variation in those acreages between action alternatives as the primary metric for impacts analysis.

3.5.1.2.2. Impacts Common to All Alternatives

As noted above, management actions that allow surface disturbance, either directly by physically moving dirt or indirectly by facilitating increased use, are those that result in the greatest impacts to cultural resources. Management actions involving recreation, travel and transportation, grazing, and wood product harvest are those with the greatest potential to impact cultural resources. Other

management actions that may impact cultural resources through ground disturbance are granting of a ROW and vegetation management.

Under all alternatives considered, recreation is expected to increase within BENM. Accordingly, activities associated with increased visitation are anticipated to impact important cultural resources, including cultural landscapes and traditional uses, simply by bringing more visitors to these locations. Increased visitation of culturally significant landscapes for the use of non-Indigenous people could interfere with specific religious ceremonies or with specific Indigenous peoples' landscape use activities. Specific impacts to culturally important localities like rock writing and structural sites from activities like recreational shooting are more fully addressed in Section 3.5.7 of this document; however, under all recreation management alternatives, designated management areas or zones would affect the allowable recreation activities and provide an opportunity for timing restrictions or visitor education to limit the potential for impacts and facilitate broader use. BLM retains authority under 43 CFR 8364.1 to issue closures to facilitate Tribal uses within the Monument.

Travel and transportation within the Monument would continue under all alternatives. Travel and transportation would, however, be actively managed to provide safe and reasonable access while protecting BENM objects. Under all alternatives, new and ongoing vehicular use in areas where use is currently limited would impact cultural resources by providing greater access to those resources. Simple access to previously inaccessible locations or to locations that were previously difficult to access increases the likelihood for incompatible uses, for example between Tribal religious ceremonial use and casual visitor use; however, management of new and ongoing vehicular use would be implemented to ensure that the travel network supports education and protection of BENM objects by roads and trails in locations that allow the public to better understand the cultural landscape without impacting objects. Moreover, under all alternatives, there are no areas in the Monument that are designated as OHV open.

Tribal access to the Monument for firewood collection is provided under all alternatives.

ROW grants are expected to continue within the Monument under all alternatives. Although a ROW grant itself does not necessarily yield impacts to cultural resources, the activity for which the grant is issued may. It follows that areas where ROW grants are not allowed would provide greater protection to cultural resources than in areas where such grants are permitted.

Under all alternatives, actions associated with vegetation management are expected to occur. For all such vegetation management actions, impacts to cultural resources would be actively considered with goals to protect culturally important plants and to incorporate Traditional Indigenous Knowledge into the management techniques of vegetation communities. Under certain alternatives, vegetation management methods would be allowed that may impact cultural resources through surface disturbance.

Under all alternatives, wildfire protection activities and fuels management projects would implement techniques and outcomes, including incorporating Traditional Indigenous Knowledge, to benefit cultural resource preservation and resiliency. Moreover, ESR and restoration efforts following wildfires would be implemented to protect and sustain resources, including cultural resources.

Under all action alternatives, agencies would collaborate with the BEC when planning, developing, and implementing management of the Monument. As noted above, the specific locations of culturally important landscapes and exactly how those landscapes are used by Indigenous peoples are considered sacred and/or important cultural information that is sometimes not shared widely.

Because such information is sensitive, direct involvement of the BEC through collaboration would ensure that culturally significant, sacred places and landscapes are fully considered by specific, implementation-level Monument management decisions but would also ensure that the sensitivity and sacredness of that information is preserved.

3.5.1.2.3. Impacts under Alternative A

Under Alternative A, lands within BENM would be managed according to prescriptions provided by the existing 1986 Manti-La Sal LRMP, the 2008 Monticello RMP, or the 2020 ROD/MMPs. Collectively, these plans designate 1,909,222 acres of BLM-administered lands as SRMAs, ERMA, RMAs, or RMZs. On lands managed by the USDA Forest Service, recreation area designations follow one of four ROS classes, including primitive areas (48,440 acres), roaded natural areas (25,700 acres), semi-primitive motorized areas (86,163 acres), and semi-primitive non-motorized areas (128,752 acres). These designations are detailed in Section 3.5.7. Cultural resources within SRMAs and or ERMA would be managed for recreational visitation under this alternative, up to and including signage, and stabilization to respond to damage or potential damage.

Under Alternative A, OHV use is managed by designating areas or zones of appropriate use. These are BLM OHV closed (389,645 acres), BLM OHV limited (685,403 acres), NFS OHV closed (46,430 acres), and NFS OHV limited (242,677 acres). Although the relationship between OHV use and impacts to cultural resources is complex, in general increased easy access to cultural resources by OHV correlates with increased impacts to cultural resources. Accordingly, areas closed or limited to OHV access would generally provide greater protection to cultural resources and fewer associated impacts.

Under Alternative A, grazing is managed through establishment of areas where grazing access is controlled through designation as available/suitable for grazing (1,223,820 acres), trailing only (3,952 acres), trailing only/emergency grazing (1,277 acres) or unavailable/not suitable for grazing (135,007 acres). Cattle grazing has the potential to impact cultural resources by introducing an intrusive presence of nonnative animals whose presence is inconsistent with the cultural and/or spiritual significance of a particular location. Accordingly, areas where grazing is limited (i.e., trailing, trailing/emergency, or unavailable/not suitable) would provide greater protection from surface disturbance of historic sites and communities than would areas that are available for grazing.

Issuance of ROWs is managed through establishment of areas that are open to ROW authorization, areas that are designated for avoidance of ROWs, and areas that are excluded from ROW authorization. Under Alternative A, 734,447 acres are open for ROW authorization, 180,329 acres are established for ROW avoidance, and 449,283 acres are excluded from ROW authorization.

Alternative A does not explicitly specify or constrain available vegetation management methods. Accordingly, management could include all available tools, including mechanical methods, which could directly damage cultural resources.

3.5.1.2.4. Impacts under Alternative B

Under Alternative B, 781,296 acres of BLM-administered lands are designated as SRMAs, ERMA, or RMZs. USDA Forest Service recreation area designations under Alternative B are unchanged from Alternative A. These designations are detailed in Section 3.5.7. Alternative B prioritizes direct intervention at locations where recreational impacts are occurring, regardless of the RMA/RMZ. Because those interventions might be things like adding signs near or in a location or defining a pathway through a location, they may cause more direct changes to the fabric of more sites;

however, those changes would be made by the agencies, in collaboration with the BEC, reducing the likelihood of inadvertent impacts by visitors. Active management of recreation areas would also provide an opportunity for visitor education about culturally important Tribal practices that could minimize visitor impacts to cultural resources. Moreover, direct involvement of the BEC in establishing allowable uses of recreation areas would better ensure that confidential ceremonies, practices, and traditional uses that are not generally shared outside of Tribal communities are accommodated.

Under Alternative B, OHV use is managed by designating zones of appropriate use as under Alternative A. These are BLM OHV closed (389,645 acres), BLM OHV limited (685,403 acres), NFS OHV closed (176,982 acres), and NFS OHV limited (112,122 acres). As above, areas closed or limited to OHV access would generally provide greater protection to cultural resources and fewer associated impacts simply by minimizing vehicular access to culturally significant places and landscapes and minimizing associated vehicular noise and lights. Under Alternative B, OHV access would be identical on BLM-administered lands as under Alternative A. On NFS land, Alternative B would close 130,552 more acres to OHV use than would Alternative A, thus limiting OHV access and associated impacts to cultural resources found within those OHV closed areas. Minimizing OHV access to portions of the BENM cultural landscape may limit traditional uses of religious or cultural importance to Tribal nations if OHVs are used to access those areas; however, it would likely minimize other incompatible OHV-assisted access and use and minimize associated vehicular noise and lights. In OHV limited areas, direct involvement of the BEC in establishing allowable OHV use would better ensure that culturally important landscapes, practices, and traditional uses are considered.

Under Alternative B, grazing access is managed through designation as available/suitable for grazing (1,194,529 acres), trailing only (5,218 acres), trailing only/emergency grazing (1,277 acres) or unavailable/not suitable for grazing (163,034 acres). Under this alternative, 29,291 fewer acres are available/suitable for grazing and 28,027 more acres are unavailable/not suitable for grazing than under Alternative A.

Under Alternative B, 5,477 acres are open for ROW authorization, 905,213 acres are named for ROW avoidance, and 453,381 acres are excluded from ROW authorizations. The number of acres open for ROW authorization is substantially reduced under Alternative B when compared with Alternative A. Under Alternative B, 728,970 fewer acres are available for ROW grants. The significant reduction in areas available for ROW authorizations under Alternative B would provide substantially greater protection to cultural resources than would Alternative A.

Under Alternative B, vegetation management would include all available tools, including those (e.g., mechanical methods) that could impact cultural resources through surface disturbance.

3.5.1.2.5. Impacts under Alternative C

Under Alternative C, SRMA, ERMA, and RMZ designations are identical to Alternative B. USDA Forest Service recreation area designations under Alternative C are unchanged from Alternative A. Alternative C targets direct intervention like interpretive signs and stabilization to visitor locations within certain RMZs such as Indian Creek Corridor, Trail of the Ancients, Mule Developed, Butler Developed, Sand Island, and the Bicentennial Highway; however, it restricts these sorts of more direct interventions within the other RMAs/RMZs in favor of more permits and off-site management. Permit restrictions to address damage could include additional stipulations, lower group sizes, or changes to the allocation (total number of people allowed in a time period). Other off-site information would include the education provided at the RMZs above, as well as website, printed materials, audio productions, etc. This alternative would have less overall change to the

fabric of visitor locations caused by stabilization actions, but would have more potential for irreversible, inadvertent damage by self-directed visitors. Additionally, direct collaboration with the BEC would better ensure that such resources are accommodated.

Under Alternative C, OHV use is managed by designating zones of appropriate use as under Alternative A. These are BLM OHV closed (487,048 acres), BLM OHV limited (588,000 acres), NFS closed to OHV travel (176,982 acres, identical to Alternative B), and NFS OHV limited (112,122 acres, identical to Alternative B). As above, areas closed or limited to OHV access would generally provide greater protection to cultural resources and fewer associated impacts. Similar to Alternative B, minimizing OHV access to portions of the BENM landscape may limit traditional Indigenous and Tribal religious use if OHVs are used to access those areas. It would, however, minimize other incompatible OHV uses. Under Alternative C, BLM OHV closed increases by 97,403 acres from Alternative A. Under Alternative C, BLM OHV limited is reduced by 97,403 acres from Alternative A; however, collaboration with the BEC would allow for consideration of OHV access restrictions in such areas that would minimize potential impacts to culturally important landscapes, practices, and traditional uses.

Under Alternative C, grazing management is identical to that under Alternative B.

Under Alternative C, no portion of the Monument is open for ROW authorization, 811,794 acres are named for ROW avoidance, and 552,278 acres are excluded from ROW authorizations. The number of acres established for ROW avoidance and for ROW exclusion is substantially increased under Alternative C when compared with Alternative A. Under Alternative C, 631,465 more acres are avoided for ROW grants and 102,995 acres are excluded. The significant increase in areas avoided or excluded for ROW authorizations under Alternative C would provide substantially greater protection to cultural resources than would Alternative A.

Under Alternative C, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed. Under Alternative C, however, light-on-the-land methods would be used in certain special designation areas such as designated wilderness, WSAs, and lands managed for wilderness characteristics. Limiting vegetation treatment methods within these special designation areas would minimize impacts to cultural resources from associated ground disturbance.

3.5.1.2.6. Impacts under Alternative D

Under Alternative D, 561,263 acres of BLM-administered lands are designated as MAs or MZs. NFS recreation area designations under Alternative D are unchanged from Alternative A. Under Alternative D, there would be fewer interventions by the agencies and the BEC overall (on- or off-site) than in Alternatives A–C because it limits both physical intervention (i.e., signs and stabilization) and permits; however, there would be less area available to recreational uses in general because more area would be closed to OHVs and dispersed camping as all inventoried LWC would be OHV closed, which in turn closes many small spur roads used for dispersed camping. This alternative would also provide the BLM with less opportunity to educate the public about the Tribal Nations connections to the BENM cultural landscape or how to appropriately view culturally significant sites. Active management of recreation areas also provides for visitor education about culturally important Tribal practices that could minimize visitor impacts to cultural resources.

Under Alternative D, OHV area designations are as follow: BLM closed to OHV travel (805,932 acres), BLM OHV limited (269,117 acres), NFS OHV closed (176,982 acres, identical to Alternative B), and NFS OHV limited (112,122 acres, identical to Alternative B). As above, areas closed or limited to OHV access would generally provide greater protection to cultural resources and fewer

associated impacts simply by minimizing vehicular access to culturally significant places and landscapes. Under Alternative D, BLM OHV closed increases by 416,287 acres from Alternative A. Similar to Alternative B, minimizing OHV access to portions of the BENM landscape may limit traditional indigenous or Tribal religious use if OHVs are used to access those areas. It would, however, minimize other incompatible OHV uses.

Under Alternative D, grazing is managed through designation as available/suitable for grazing (953,692 acres), trailing only (49,889 acres), trailing only/emergency grazing (1,277 acres) or unavailable/not suitable for grazing (359,201 acres). Under this alternative, 270,128 fewer acres are available/suitable for grazing, and 224,194 more acres are unavailable/not suitable for grazing than under Alternative A.

Under Alternative D, no portion of the Monument is open for ROW authorization, 515,052 acres are named for ROW avoidance, and 849,021 acres are excluded from ROW authorizations. The number of acres established for ROW avoidance and for ROW exclusion is substantially increased under Alternative D when compared with Alternative A. Under Alternative D, 334,723 more acres are avoided and 399,738 more acres are excluded for ROW grants. The significant increase in areas avoided or excluded for ROW authorizations under Alternative D would provide substantially greater protection to cultural resources than would Alternative A.

Under Alternative D, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed. Under Alternative D, however, light-on-the-land methods are encouraged throughout the Monument wherever practical. Limiting surface-disturbing vegetation treatment methods across the Monument wherever practical would minimize impacts to cultural resources from such ground disturbances.

3.5.1.2.7. Impacts under Alternative E

Under Alternative E, four recreation zones are designated Front Country (18,995 acres), Outback (265,299 acres), Passage (7,498 acres), and Remote (1,072,587 acres). Under Alternative E, 1,364,379 acres receive active recreation management. There are no comparable recreation zones under Alternative A. Similar to the other action alternatives, under Alternative E active management of recreation areas would provide for timing restrictions that minimize incompatible recreational use of an area with specific Tribal cultural or ceremonial practices. Active management of recreation areas also provides for visitor education about culturally important Tribal practices that could minimize visitor impacts to cultural resources.

Under Alternative E, OHV area designations are as follows: BLM OHV closed (392,989 acres), BLM OHV limited (682,059 acres), NFS closed to OHV travel (176,982 acres, identical to Alternative B), and NFS OHV limited (112,122 acres, identical to Alternative B). As above, areas closed or limited to OHV access would generally provide greater protection to cultural resources and fewer associated impacts. Similar to Alternative B, minimizing OHV access to portions of the BENM landscape may limit traditional Indigenous or Tribal religious use if OHVs are used to access those areas. It would, however, minimize other incompatible OHV uses. Under Alternative E, BLM OHV closed increases by 3,344 acres from Alternative A. Under Alternative E, BLM OHV limited is reduced by 3,344 acres from Alternative A; however, collaboration with the BEC would allow for consideration of OHV access restrictions in such areas that would minimize potential impacts to culturally important landscapes, practices, and traditional uses.

Under Alternative E, areas available/suitable for grazing, trailing only, trailing only/emergency grazing, and unavailable/not suitable would be managed the same as under Alternative B. Additional actions, including prioritization of review and processing of grazing permits and leases,

identifying subareas of allotments necessary for closure, and reassessing stocking levels and season of use could provide additional protection to cultural resources.

Under Alternative E, no portion of the Monument would be open for ROW authorization, 259,116 acres are named for ROW avoidance, and 1,104,956 acres would be excluded from ROW authorizations. The number of acres established for ROW exclusion is substantially increased under Alternative E when compared with Alternative A. Under Alternative E, 655,673 more acres are excluded for ROW grants. The significant increase in areas avoided or excluded for ROW authorizations under Alternative E would provide substantially greater protection to cultural resources than would Alternative A.

Under Alternative E, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed only when necessary to protect BENM objects. Under Alternative E, however, vegetation management methods would emphasize Traditional Indigenous Knowledge and/or natural processes. Limiting surface-disturbing vegetation treatment methods across the Monument wherever practical would minimize impacts to cultural resources from such ground disturbances.

3.5.1.2.8. Cumulative Impacts

Recreation and tourism are expected to increase regionally and to increase accordingly within BENM. Such increases in visitation will likely bring increased OHV use and associated access to more and more remote cultural resources. Additional visitation to these more remote locations will likely have an associated impact to these sites. A simple increase in foot traffic at cultural sites establishes social trails and accelerates erosion.

Wildfire and other natural forces will continue to stress resources within BENM. In the case of wildfire, sensitive materials and objects may be damaged or destroyed, but postfire conditions may threaten sites through intensified erosion or other postfire processes. Additionally, the removal of the vegetative cover also encourages unauthorized motorized use within burn areas. Fluctuations in precipitation, freeze-thaw cycles, and seasonal access to the Monument are also stressing cultural resources. High-intensity rainfall will continue to alter erosional patterns and accelerate structural decay, while fluctuations in weather patterns may permit a wider window of visitor access.

A number of RFFAs could impact cultural resources. Some types of future actions have the potential to increase visitation to either known or currently undocumented culturally sensitive areas or TCPs (e.g., House on Fire Trailhead, Bluff River Trail, Salt Creek Trail Reconstruction, SUPs: recreation events/outfitter-guides, and Utah Back Country Pilot Association Dark Canyon Airstrip). Additionally, projects involving new ground disturbance could each impact either known or undocumented culturally sensitive areas or TCPs (e.g., Indian Creek Allotment Range Improvements, Emergency Repair: UDOT San Juan Bridge Repair, ROW UTU-96101 for Geotechnical bore holes, and Flats Water Wells and Kane Fence). Projects involving new ROWs have the potential to both bring additional people near culturally sensitive areas or TCPs during construction and maintenance activities and also involve ground disturbances (e.g., Mancos Mesa ROW access and Summit Operating pipeline ROW).

3.5.2. Archaeological Sites

BLM policy defines cultural resources to include archaeological and historic localities (BLM 2004:2). This section separately addresses pre-contact archaeological sites to more closely align with their discussion in the 2022 BEITC LMP. Historic resources are addressed in a subsequent section.

Archaeological resources are areas where pre-contact or post-contact activity altered the earth or where deposits of physical remains are identified. European contact with Indigenous people defines the time frames for the pre- and post-contact archaeological periods. Pre-contact period archaeological resources are those materials deposited or left behind prior to European contact. Post-contact period archaeological resources are those materials deposited or left behind following European contact with Indigenous peoples until present. From the Zuni perspective, all of the archaeological sites in BENM are conceptually grouped together and identified as *enote hes'ahdowe* (literally, “old homes”). Hopi and Zuni consider all of these archaeological sites to be monuments that commemorate the lives of their ancestors. Hopi and Zuni cultural advisors have expressed that these sites are important sources of information, and more importantly, they are still occupied by the spirits of ancestors. Navajo people have always had respect for the Ancestral Puebloan sites. The sites are referred to as *Anaasazi' da'bighan intee'* (ancestors' homes). Navajo people generally do not visit or disturb these sites because they are viewed as the homes of the early people. Navajo oral traditions and archaeological and historical records document their occupation in and around BENM. Exploitation of pre-contact artifacts and sites are of great concern to Navajos. Post-contact and pre-contact belongings of the Ute people are evident in the form of tipi rings, wickiups, artifacts, and rock writings.

There are various and competing uses for tangible heritage resources like archeological sites. Management of these resources in an area like BENM will necessarily involve prioritizing and protecting some uses, while deemphasizing or even prohibiting others. The various alternatives provide general direction for making choices in regard to the use of individual archaeological sites. Uses include, but are not limited to; archeological research, which may prioritize the physical integrity of the site or data collection; use by Tribal members, who may have specific needs in regards to intangible aspects of integrity like auditory resources, solitude, and sense of place; education, which may prioritize Western scientific understandings and/or explaining the connections of the Tribes to BENM; recreation, which may prioritize interpretation of and access to sites; and agency use, which may proscribe particular preservation or use strategies based on law, regulation, policy, or custom/agency culture.

3.5.2.1. AFFECTED ENVIRONMENT

More than a century of Western scientific research in the Planning Area and the surrounding region has provided western researchers with a wealth of information on the lifeways and cultural traditions of southeastern Utah. Still, only a small portion of the BENM landscape has been subject to formal archaeological survey. As of August 2022, approximately 231,000 acres of the Monument have been surveyed for archaeological sites. These surveys have identified more than 6,600 individual sites and it is likely that many, many more are present but have not yet been documented. Much of this Western scientific information is described and summarized in culture history sections of archaeological survey and excavation reports, in an occasional regionally specific archaeology or history textbook, and in peer-reviewed journal articles. As noted in the 2022 BEITC LMP, all of the BEITC Tribal Nations have ancestral and cultural connections to BENM. Importantly, “they consider all ancestral places as integral in understanding the broader picture of Tribal history and religion” (see Appendix L:30). To these Tribes, the time frames and lifeways in the past are directly connected to living people.

The BENM landscape is well known for its abundance of pre-contact and post-contact archaeological sites. Indeed, Proclamation 10285 notes the Monument's archaeological heritage, including abundant rock writings, cliff houses, towers, and granaries, among others. Well-known archaeological sites and localities, many of which are named by Proclamation 10285, include Elk Ridge, House on Fire, Doll House, Mule Canyon Village, Milk Ranch Point, Comb Ridge, Grand Gulch, Butler Wash Village, Monarch Cave, Newspaper Rock, Procession Panel, Wolfman Panel,

Butler Wash Kachina Panel, Sand Island Petroglyph Panel, Citadel Cliff Dwelling, Turkey Pen Site, Junction Village, Cave Towers, and the Lime Ridge Clovis Site, among many others.

The primary objective of this section is to provide a summary of Western scientific understanding of the BENM region, organized as a regional culture history. This section summarizes the pre-contact history of the region, that is, the time before European and Euro-American exploration and settlement, and the lifeways of Tribal Nations in the area at the time of Euro-American contact. BEC Tribes whose deep ancestry provide a direct cultural connection to the BENM region have parallel but culturally private understandings of this long history of human presence within the Monument.

3.5.2.1.1. Pre-contact Context

Southeastern Utah contains one of the richest records of pre-contact archaeology in the United States. The record is dominated by the belongings of cultural material from Ancestral Puebloans, although previous occupation by “preceramic” foragers and farmers is abundant. The area also shows considerable evidence of occupation in the following centuries by ethnohistoric/protohistoric and post-contact period peoples (Table 3-73). These cultures are broken down into four broad pre-contact periods in the analysis area: the Paleoindian, the Archaic, the Formative, and the Ethnohistoric/Protohistoric (see Table 3-73). The Ethnohistoric/Protohistoric period ended when Euro-American explorers and settlers arrived in the region, marking the beginning of the Post-contact period.

Table 3-73. Pre-contact Cultural Chronology for the Planning Area

Period	Years before Present (B.P.) or B.C./A.D.*	Subperiod	General Diagnostic Features and Artifacts
Paleoindian	> 11,000–10,000 years B.P.	Not applicable (N/A)	Projectile points: fluted (Clovis and Folsom) and non-fluted (Black Rock Cave and Great Basin Concave Base variants); large stemmed projectile points of the Great Basin/Western Stemmed and Windust varieties. Paleoindian archaeology typically consists of isolated projectile points, features, or artifact scatters and kill sites, rock writings, and small, open campsites.
Archaic	10,000–2,500 years B.P.	Early	In chronological order of first appearance: Pinto points, Elko Series points, Humboldt Concave base points, and Northern Side-notched points; basketry, netting, and snares as well as some rock writings elements—the oldest style in the area: Glen Canyon Linear.
		Middle	Projectile points: Elko Series, Northern Side-notched, Humboldt Concave base, Rocker Side-notched, Sudden Side-notched, and Hawken Side-notched; slight increase in the frequency of ground stone; residential and logistical use of upland settings increase.
		Late	Projectile points: Gatecliff, Gypsum, San Rafael Side-notched, Chiricahua, and Armijo; upland areas sometimes used more intensively than lower-elevation areas; ground stone becomes more prominent; trade in exotic or hard-to-find items such as obsidian, turquoise, and marine shells more common; some Indian Creek Barrier Canyon rock writings elements appear.
Formative	500 B.C.–A.D. 1300	See Table 3-74	See Table 3-74
Ethnohistoric / Protohistoric	A.D. 1300–1850†	N/A	Population size reduction across most of the Colorado Plateau and aggregation in massive communities in the northern Rio Grande and northeastern Arizona; sites are sparse lithic scatters with low quantities of brown ware ceramics; diagnostic rock writings; occasionally characteristic wikip remains; Uncompahgre Brown Ware, Desert Side-notched and Cottonwood Triangular projectile points; archaeological record begins to match ethnographic descriptions of Ute, Paiute, and Navajo groups.

* In this section, dates in years before present (B.P.) are provided for the Paleoindian and Archaic periods. Calendrical dates are provided using B.C. and A.D., and such dates are used for the Formative and Ethnohistoric/Protohistoric periods.

† By ca. A.D. 1275, Indigenous people had moved away from most of the Ancestral Puebloan villages in the Four Corners area, including all of those in southeastern Utah. The majority of researchers therefore consider subsequent (Pueblo IV) developments to be part of the Ethnohistoric/Protohistoric period.

Paleoindian Period

The earliest conclusive evidence for a human presence in the northern Colorado Plateau region dates to just before 11,000 years B.P., or to approximately 13,000 calendar years ago (Beck and Jones 1997; Graf and Schmitt 2007). The Paleoindian period represents adaptations to terminal Pleistocene environments and is characterized by small groups of relatively mobile foragers who used most sites only briefly or infrequently. This stage is further split into three traditions named for their characteristic projectile points: Clovis (12,000–11,000 years B.P.), Folsom (11,000–10,300 years B.P.), and Plano (10,300–9,800 years B.P.). The primary difference among these traditions is the slight variability in projectile point form that they exhibit, which likely resulted from changing environments and subsistence strategies. In many cases, Paleoindian-associated artifacts are found in lower elevations along major river valleys where Pleistocene megafauna congregated. As the climate warmed and vegetation changed, Plano peoples also began to exploit resources found in higher elevations such as the La Sal Mountains.

Paleoindian archaeological materials are rare on the Colorado Plateau, especially in comparison with the Great Plains region to the east and the Great Basin region to the west, so considerations of Paleoindian lifeways in the Planning Area must therefore be extrapolated from regional data (Spangler et al. 2010:56). Traditional literature on Paleoindian lifeways has emphasized big-game hunting, and some postulate that over-exploitation of Pleistocene megafauna led directly to the extinction of those animals throughout the continent (Martin 1973). That hypothesis has been challenged in more recent literature (e.g., Haynes 2007), as has the idea that Paleoindians relied almost entirely on hunting as a means of subsistence. Ethnoarchaeological evidence (e.g., Binford 1984; Hawkes et al. 1991) suggests that Paleoindian foragers relied on a wide array of resources, were likely organized at a band level, and hunted individually or in small groups. Later Paleoindian populations may have organized larger, more communal hunting efforts (e.g., Carlson and Bement 2013).

Paleoindian archaeology typically consists of isolated features or artifact scatters, kill sites, rock writings, and small open campsites, and is sparse in and around the Planning Area. The so-called Bluff Mammoth site—observed by local artist Joe Pachak and reported by Malotki and Wallace (2011) and Malotki (2012)—is an apparent depiction of two Columbian mammoths in the Upper Sand Island petroglyph panel on the San Juan River corridor near the town of Bluff. In addition, an extensive and significant Clovis site is located south of Bluff. Known as the Lime Ridge Clovis site, it was the first Clovis site on the northern Colorado Plateau where artifacts diagnostic of this period were positively confirmed (Davis 1989). Research conducted in the Glen Canyon area of San Juan County has also demonstrated a limited human presence there during the Paleoindian period (Geib 1996:7). Two Paleoindian projectile points have also been found in the vicinity of NBNM: a Hell Gap point found in association with *Bison bison* bones, and an unfinished and broken fluted biface similar to a Clovis point (Irwin 1999). A broken Folsom point has been documented on Milk Ranch Point on the southeastern edge of Elk Ridge plateau (Irwin et al. 2000).

Archaic Period

By the 1970s, Archaic had become the term of choice to categorize the preceramic, non-agricultural, non-Paleoindian phenomena found throughout the Southwest and Great Basin regions (Lipe and Pitblado 1999). The Archaic period spans from approximately 10,000 to 2,500 years B.P. Matson (1991) divides the Archaic period into four subperiods: Early (approximately 10,000–6,000 years B.P.), Middle (6,000–4,000 years B.P.), Late (4,000–3,000 years B.P.), and Terminal (3,000 to approximately 2,500 years B.P.). Compared to other areas on the Colorado Plateau, the higher, cooler, and wetter locations of Cedar Mesa, Montezuma Canyon, NBNM, and Elk Ridge in and

around BENM are noted for numerous Archaic period sites of varying size and complexity (Irwin-Williams 1979; Lipe and Pitblado 1999).

Archaic artifacts, most frequently in the form of isolated diagnostic projectile points, are occasionally found within the Planning Area and throughout the surrounding region (Hurst and Robinson 2014:25). Rock writings elements that researchers associate with the Archaic have also been identified along the San Juan River south of the Planning Area and along the Salt Creek drainage and nearby Indian Creek near the northern portion of BENM.

EARLY ARCHAIC

The Early Archaic period encompasses most of the early and middle Holocene period of warm and dry climate (Grayson 1993, 2011). For the broad eastern Great Basin and northern Colorado Plateau region, environmental changes during the period leading up to and including the middle Holocene have been particularly well documented at Homestead Cave (Madsen 2000). These records indicate increased mean temperatures, increased aridity, and corresponding changes in vegetation, such as a substantial increase in the abundance of shadscale relative to sagebrush. Pinyon approached its modern distribution during this period (Rhode and Madsen 1998).

Climatic changes caused a reduction in the distribution of Pleistocene megafauna, in some cases to the extinction of animals that were typically adapted to the cooler, moister climates. With changing climates came the expansion and modification of artifact assemblages as people adapted to a wider, more dispersed fauna and plant resource base. Continuing the trend that began during the later Paleoindian period, higher-elevation settings began to be used even more frequently during the Early Archaic, perhaps representing further subsistence generalization. An expansion of diet breadth is certainly indicated by the increased frequency of ground stone artifacts that occurs across the region during this period; this increased use of grinding tools undoubtedly reflects the incorporation of high-cost small seeds into the diet, most likely due to declines in the abundances of higher-return wetland resources (Grayson 1993, 2011; Janetski et al. 2012; Rhode et al. 2006).

MIDDLE ARCHAIC

The Middle Archaic period spans the remainder of the middle Holocene, and the climate generally continued to be warm and dry; however, a slight increase in the frequency of ground stone seems to indicate a stronger reliance on plant resources than in previous periods (Matson 1991). Middle Holocene environmental changes reconfigured the spatial and temporal distribution of resources important to earlier occupants of the region. As a result, settlement and subsistence systems tethered to discrete locations of abundance fell apart during the Middle Archaic.

Archaeological sites of Middle Archaic age tend to be ephemeral in nature and are often quite difficult to adequately place in time. The Middle Archaic is characterized by an expansive, albeit short and transient, use of nearly every available habitat; occupations were brief and people were mobile, occupying a variety of task-specific sites (Simms 2008). Previously, some archaeological scholars posited that the region was largely uninhabited during the middle Holocene. On the Colorado Plateau, adaptive shifts and increased relative mobility likely explain gaps in the data that appear during the Middle Archaic (Geib 1995).

LATE AND TERMINAL ARCHAIC

The beginning of the Late Archaic coincides roughly with the time when the climate began to approach modern conditions; because of this, throughout much of the Colorado Plateau, the Late Archaic saw the establishment of a mixed farming-foraging subsistence economy and a

concomitant increase in sedentism (Huckell 1996). Simms (2008:167) characterizes the Late Archaic as a “culmination of the foraging way of life.” Archaeological evidence indicates that nearly every available resource in nearly every available place was in use. Additionally, Late Archaic peoples more often lived in rockshelters than did more mobile earlier groups, and it was also a time of trade in exotic or hard-to-find items such as obsidian, turquoise, and marine shells.

In the Planning Area, the Late Archaic period is represented by Old Man Cave (42SA21153). Old Man Cave is a dry shelter located on the northeastern edge of Cedar Mesa where both Basketmaker II and Archaic cultural materials were evident (Geib and Davidson 1994). The cave appears to have been steadily occupied for approximately 1,000 years before an extended hiatus from approximately 6,000 years ago to approximately 1,800 years ago—i.e., between the Terminal Archaic and the Basketmaker II period (Geib and Davidson 1994:200–201).

Late Archaic culture started to diminish in what Schroedl (1976) suggested is the Terminal Archaic, which has an indefinite termination, probably centering around 2,000 years B.P., when horticulture begins to replace strictly hunter-gatherer modes of subsistence in the inventory area. Subsequent paleodietary research focused on coprolite and skeletal remains from Cedar Mesa (Coltrain et al. 2007) has demonstrated that local populations were fully dependent on cultivated maize by 3,000 years B.P. or earlier, such that most scholars of Southwest archaeology now push the Basketmaker II horizon back to that date and do away with the idea of a Terminal Archaic period altogether.

Formative Period

The Formative period is marked by an emphasis on domesticated plants, most notably maize (*Zea mays*), sedentary or semisedentary settlement near areas optimal for horticulture, and the introduction of pottery (Horn et al. 1994; Matson 1991). With the introduction of horticulture, human occupation of the Colorado Plateau became more intensive, as this new means of food acquisition allowed for larger population densities. The Formative era in the inventory area is represented by Ancestral Puebloan occupation (see Table 3-74), although Fremont presence and influence are noted in the northern portions of the Planning Area (see Geib 1996; Geib and Bungart 1989). The culture phase sequence used here follows the classification system proposed by A. V. Kidder at the first Pecos Conference in 1927, and although errors have been pointed out in this system, there is definite regionwide patterning in architecture, occupation and population reduction sequences, and tree-cutting booms and busts that articulate with paleoclimate data in a manner that broadly agrees with the Pecos Classification (see Benson and Berry 2009; Bocinsky et al. 2016; Matson et al. 2015; Matson et al. 1988).

Table 3-74. Ancestral Puebloan Chronology

Period	Dates B.C./A.D.	General Diagnostic Features and Artifacts
Basketmaker II	1500 B.C.–A.D. 500	Shallow pit houses with slab-lined entryways; earliest maize cultivation; general absence of pottery; more hunting implements, including atlatls, curved throwing sticks, rabbit nets, and a variety of snares; and petroglyphs and pictographs are relatively common features.
Basketmaker III	A.D. 500–750	Adoption of ceramic vessels, typically brown wares constructed from self-tempered alluvial clays; early gray and white wares are evident later in the period on plain gray jars and simple black-on-white bowls; residential sites, or hamlets, and pit houses are indicated by shallow depressions and/or house-sized ash stains; the bow and arrow replaces the atlatl with Rosegate style, Abajo Stemmed, and Dolores Straight or Expanding Stem projectile points.

Period	Dates B.C./A.D.	General Diagnostic Features and Artifacts
Pueblo I	A.D. 750–900	Pueblo I habitations consisted of an arc of jacal, adobe, and/or stone masonry rooms with one or more pit structures located in an unenclosed plaza or courtyard area to the south with a deep, generally subrectangular, structure with a ventilator shaft complex; walls are rectilinear; storage rooms are basally lined with upright slabs; residential units also include room blocks arranged end-to-end to form curving or L-shaped composite room blocks with associated pit structures in front. Ceramic assemblages are marked by the addition of neck-banded gray ware (Moccasin Gray and early Mancos Gray), more refined white ware (White Mesa Black-on-white), and sophisticated red ware (San Juan Red Ware types such as Abajo Red-on-orange and Bluff Black-on-red).
Pueblo II	A.D. 900–1150	Emergence of the “great house” system of community organization, which is best known from the Chaco Canyon area; continuation of Pueblo I trends such as unit pueblo layouts, earthen-walled subterranean pit structures, and surface room blocks of rectilinear rooms with narrow walls and rounded-to-square corners, and the introduction of the kiva; side-notched projectile points, with a small version of the Bull Creek Triangular style; slab-lined milling bins with permanently emplaced metates.
Pueblo III	A.D. 1150–1290*	Settlements relocated to reliable springs and into canyons or on cliff walls; Pueblo III ceramic assemblages include Mesa Verde Corrugated, McElmo Black-on-white, and Mesa Verde Black-on-white and vessels show the replacement of pitcher forms by mugs; less long-distance trade; architectural innovations include multistory habitations with kivas wholly or partially enclosed by rooms or walls, Mesa Verde keyhole-shaped kivas, tri-wall structures, towers, large, plaza-oriented pueblos, reservoirs, shrines, stone check dams, and field houses; stone masonry almost entirely replaced construction with timber elements; the middle and late Pueblo III period saw complex agglomerations of room blocks and kivas in tightly aggregated pueblos clustered on canyon rims with associated towers.
Pueblo IV	A.D. 1300–1600*	Population size reduction across most of the Colorado Plateau and aggregation in massive communities in the northern Rio Grande and northeastern Arizona; sites are sparse lithic scatters with low quantities of brown ware ceramics; diagnostic rock writings; and occasionally characteristic wikiup remains; Uncompahgre Brown Ware, Desert Side-notched and Cottonwood Triangular projectile points.

Note: This regional summary is based on the Pecos Classification (Kidder 1927). Regional and subregional variations are described in the literature but are not noted here.

* By ca. A.D. 1275, Indigenous people had moved away from most of the Ancestral Puebloan villages in the Four Corners area, including all of those in southeastern Utah. The majority of researchers therefore consider subsequent (Pueblo IV) developments to be part of the Ethnohistoric/Protohistoric period.

BASKETMAKER II

The early Basketmaker II period (ca. 1500 B.C. to A.D. 450) is an “agricultural, atlatl-using, non-pottery-making stage” marked by an increasingly sedentary settlement system, the advent of more substantial dwellings, and an increasing reliance on maize and squash horticulture (Burrillo 2016a; Kidder 1927:490; Lipe 1999). Although foraging for wild plants and hunting did not cease, there was a trend toward seasonal sedentism until settlement in small villages or hamlets replaced the nomadism of the Archaic period (Dohm 1994; Lipe 1999; Matson 1991). The result was a farmer-forager subsistence complex in which people were tied to the land as farmers while continuing to hunt and gather (Charles 2009:13).

Occupation in and around BENM during the Basketmaker II period seems to have focused first on rockshelter habitations in canyon areas where floodwater could be used for irrigation (Matson 1991), including the canyons of Comb Wash, Butler Wash, and the Grand Gulch area (Hurst and Robinson 2014:26). Starting ca. 100 B.C., people built open-air, relatively substantial pit houses in higher upland areas that also offered floodwater farming potential, such as Cedar Mesa. By the A.D. 300s, populations clustered into neighborhoods of pit houses in open upland settings in areas more suited to dry farming than floodwater farming (Dohm 1994; Matson 1991).

In southeastern Utah, the Basketmaker II culture period is best represented on Cedar Mesa. Lipe (1970:93–104) first reported on limited Basketmaker presence in Castle Wash and Moqui Canyon to the west of Cedar Mesa while conducting fieldwork associated with the Glen Canyon Project.

Regional knowledge of early Basketmaker architectural styles (Pollock 2001), settlement patterns (Dohm 1994), mortuary practices (Hurst and Turner 1993), and rock writings (Cole 1993) all either derive from, or are heavily informed by, the extensive Basketmaker II archaeology of Cedar Mesa. Elsewhere in the Planning Area, Basketmaker II remains have been formally excavated at Old Man Cave (Geib and Davidson 1994) in Comb Wash. The extensive representations of San Juan Basketmaker rock writings along the San Juan River and its tributaries have been the focus of several major rock writings studies, from descriptive documentation to models of socioeconomic organization (Robins 1997).

BASKETMAKER III

Generally, the Basketmaker III period (A.D. 450–750) can be distinguished from the preceding period by the introduction of three new cultural traits: the use of the bow and arrow, the cultivation of beans, and the production of well-made gray and white ware pottery—all of which imply a more settled and sedentary way of life (Nichols 2002; Reed 2000; Wilshusen 1999a). Comparison of the ratios of known Basketmaker II and III sites throughout the Southwest indicate that a large population increase occurred during the Basketmaker III period.

The most common type of late Basketmaker site is the hamlet, or residential site. These account for the overwhelming majority of the known Basketmaker III sites in the region (Wilshusen 1999a). The tool, faunal, and macrobotanical inventories from this period from a wide range of sites indicate that exploitation of wild resources continued, but farming had become the predominant subsistence activity. The appearance of ceramic production in the local archaeology marks the widespread adoption of ceramic vessels during the Basketmaker III period, including ceramic firing pits, or kilns. Surface remains of kilns are generally limited to curvilinear alignments or enclosures of upright stone slabs. In most cases, kilns can be distinguished from similar-looking features like storage cists or hearths principally on the basis of location: on slopes or in drainages, in areas between two drainages, and on slopes and benches below rims. Along Cedar Mesa there is a high percentage of sites with associated kilns.

By the late A.D. 600s, community organization of these residential structures began to exhibit what Lipe (2006) calls the “San Juan pattern” of settlement layout: surface architecture (consisting of only non-contiguous storage cists in the Basketmaker III period), pit structure, and midden arrayed in a north-northwest to south-southeast alignment. Overall population in the Southwest began to grow during this period. In some areas, settlements clustered into clear communities, sometimes with extraordinarily large pit structures or great kivas that may have served community integrative functions.

In general, Basketmaker III sites on the Colorado Plateau are numerous and have been well researched; in and around the Planning Area, extensive Basketmaker III occupation has been demonstrated along the San Juan River and in at least one major drainage area on Cedar Mesa (Benson 1984). Basketmaker III communities have been studied extensively on Elk Ridge and in Montezuma Canyon (see Montoya 2008). The most important excavated Basketmaker III site in the region surrounding the Monument is just to the west of Bluff along the San Juan River, where investigations revealed several pit houses, a communal midden, and a communal cemetery in a late-A.D. 600s village (Hurst and Robinson 2014:30; Neily 1982). Kilns have been found in association with field houses and habitation sites in the South Cottonwood drainage and in and around Recapture Wash that likely date to this era (Severance 2015:120–122). And in Comb Wash, the iconic Procession Panel is believed to be a Basketmaker III site that depicts many people traveling toward a central place, possibly a great kiva (Wilshusen 2009:22–23).

PUEBLO I

The emergence of villages is often touted as the hallmark of the Pueblo I period (A.D. 750–900) throughout southeastern Utah, although its expression was quite variable in form and organization (Allison et al. 2012; Wilshusen 1999b). Changes in architecture, settlement layout, and diagnostic ceramic styles are notable during this period; Pueblo I populations in some areas were aggregated into large villages with as many as 400 rooms, while populations in other districts continued to occupy dispersed hamlets of three to 20 rooms scattered across the landscape (Wilshusen 2009:23). Villages consisted of multiple households with contiguous aboveground living and storage rooms, sometimes with an associated oversized pit structure or great kiva, rock writings panels, and landscape features such as shrines and plaza areas.

Pueblo I ceramic developments were vast and varied, reflecting the noteworthy cultural migrations and aggregations that typify this time period. Pueblo I ceramic assemblages are marked by the addition of neck-banded gray ware, more refined white ware, and a new and remarkably sophisticated red ware technology to the ceramic inventory.

In southeastern Utah, Pueblo I populations appear to have concentrated in large settlements along major drainages and in the uplands surrounding the upper reaches of South Cottonwood Wash, including Comb Wash, Cottonwood Wash, Recapture Canyon, Montezuma Canyon, and along the San Juan River (see Hurst and Robinson [2014] for discussion and summary). Many Pueblo I sites are found in wet uplands locations with deep soils—e.g., Elk and Alkali Ridges—and Pueblo I is not well represented in lower-uplands settings like the top of Cedar Mesa (Matson et al. 1988). This pattern may represent a response to drought conditions during the A.D. 800s, with low precipitation and extended growing seasons favoring settlement along major drainages and in upland areas with higher effective precipitation (Petersen 1988).

Pueblo I sites are well documented in the high upland areas north of Cedar Mesa on and around Elk Ridge and Bears Ears (Allison et al. 2012; Burrillo 2017), with the majority of them being found on Milk Ranch Point (e.g., Guilfoyle 2004).

PUEBLO II

The Pueblo II period spans the interval from ca. A.D. 900 to 1150, in which a climatic change to cooler, drier conditions around A.D. 890 seems to have caused a shift in the settlement pattern to small hamlets (Benson and Berry 2009). Early Pueblo II populations dispersed over much wider areas to seek out those ecological niches where their form of subsistence could still be practiced. Habitation sites of this period are not common and regional populations appear to have been small.

Although much of the population continued to occupy small, dispersed habitations, the middle-late Pueblo II period witnessed significant increases in population and settlement proliferation throughout the northern San Juan region, most likely due to local fecundity in response to a series of rainy decades. The increasing population and settlement density of the mid-late Pueblo II period is also suggestive of immigration (Hurst and Robinson 2014; Wilshusen and Ortman 1999.)

During the A.D. 1000s, climate appears to have been prevalingly hospitable to subsistence farmers, which resulted in a proliferation of settlement in most localities. Great houses, great kivas, and enormous roads form central elements of a surrounding community of dispersed households and farmsteads. Chacoan-style great houses and segments of Chaco-style roads have been found on and around Cedar Mesa (Cameron 2009). Pueblo II great house remnants have been identified

throughout the region surrounding the Monument, including the Arch Canyon–Comb Wash confluence (Hurst and Robinson 2014:34) and in nearby Bluff (Cameron 2009).

The increase in population and connection to other areas led to remarkable shifts in ceramic types affiliated with this period. Significant ceramic changes are evident in all three major technological wares. Slab-lined milling bins with permanently emplaced metates also became common throughout the northern San Juan region during this time; however, no distinctive Pueblo II period style of rock writings has thus far been defined.

By the end of the Pueblo II period, the region was in the grip of a severe drought, and people throughout the Four Corners region had ceased construction of Chacoan-style great houses (Lipe 2009:30). The area west of Comb Ridge was essentially depopulated at the end of Pueblo I or the beginning of Pueblo II (Lipe 2014). Archaeological evidence indicates that people most likely moved to the area east of Blanding. After an absence of approximately 150 years, many of the descendants of these migrants returned to the area west of Comb Ridge to their formerly occupied homeland (Lipe 2014; Matson et al. 1988). Pueblo II communities have also been documented on Cedar Mesa (Matson et al. 1988) and at NBNM (McVickar 2000). Pueblo II sites are also common in the vicinity of Cottonwood Wash (Irwin et al. 2000). Haase's 1983 dissertation focuses on late Pueblo II and early Pueblo III occupation on and around Cedar Mesa, based on data from the Cedar Mesa Project; he contends that habitations are small compared to Pueblo II settlements elsewhere in the Southwest (Matson et al. 1988), but that an increase in the number and complexity of sites was nonetheless evident.

PUEBLO III

Pueblo III has been characterized by the emergence of large communities, highly elaborate artistry, and specialization of crafts and social functions. It is during the Pueblo III period (A.D. 1150–1300) that the iconic cliff dwellings of the Southwest appeared. The last century and a half of Ancestral Puebloan occupation in the San Juan region witnessed more changes over a shorter span than any previous era (Varien 2006:39).

The early Pueblo III period is marked by extensive evidence of cultural upheaval and reorganization (Hurst and Robinson 2014:36). The shift in settlement locations featuring arable soils to those featuring water sources during the early Pueblo III period is intriguing. For approximately 600 years, Ancestral Puebloan farmers had lived adjacent to the areas they farmed and journeyed to fresh water sources. During the early thirteenth century, they began to do the precise opposite: living by their water sources and journeying to their fields (Matson et al. 2015; Varien 2006:41). Settlements often aggregated around springs, in a possessive posture that appears to mark a pronounced departure from earlier settlement location protocols that had discouraged settlement in direct proximity to springs.

In and around the BENM area, Ancestral Puebloan communities appear to have flourished during the Pueblo III period. Populations in the San Juan region probably reached their peak ca. A.D. 1200; however, subsequent decades witnessed drastic changes. Populations continued to aggregate into larger, more compact and architecturally complex settlements, often defensively sited or constructed. Pueblo III settlements in southeastern Utah indicate a heavy occupational density up until the decades of the mass depopulation (Brew 1946).

Architectural innovations also appeared and spread quickly throughout the region during the early Pueblo III period. In addition to population aggregation, these developments also signal a change in social organization, increased ceremonialism, and intensification of the agricultural subsistence base. Throughout the Four Corners region, pottery types became quite distinct in design, layout,

and form. However, long-distance trade became less and less common through the Pueblo III period, with communities becoming more and more isolated from each other over time (Varien 2006:44). This likely represents a breakdown of regional social exchange and interaction that accompanied environmental stressors in the late thirteenth century A.D.

Towers became a popular architectural feature during the later Pueblo III period (Kantner 2004:171–174). Towers were most often located at the heads of canyons, as in the Cave Towers complex on Cedar Mesa, although they were also built in open areas, on top of rock escarpments or buttes, and in large alcoves. Late Pueblo III villages show increasing levels of territoriality and defensiveness, being sometimes placed in locations that offered inter-visibility that enabled signaling or mutual observation (Hurst and Robinson 2014:37).

Numerous Pueblo III period sites in the BENM area have been identified in open-air and alcove settings throughout southeastern Utah (Lipe and Varien 1999), including Cedar Mesa (Matson et al. 1988), Salt Creek (Chaffee et al. 1994), Beef Basin (Rudy 1955), and Cottonwood Wash (Irwin et al. 2000). Nearly all of the cliff dwellings in BENM—including those in Salt Creek, Comb and Butler Washes, Cottonwood Canyon, Beef Basin, and Grand Gulch—date to the Pueblo III period (Burrillo 2016b; Spangler et al. 2010).

For still-uncertain reasons, Ancestral Puebloan populations withdrew completely from the San Juan Basin area by the end of the A.D. 1300s (Glowacki 2015). The reduction in population size was apparently a gradual process, and Indigenous people appear to have left Cedar Mesa earlier than the rest of the San Juan Basin by at least a few decades, where local depopulation began to occur well before the mega-drought of the A.D. 1270s (Matson et al. 2015). Most researchers believe that these populations probably moved south, eventually joining other groups in large communities along the Rio Grande and Little Colorado Rivers and their tributaries in New Mexico and Arizona, and where their descendants continue to occupy Pueblo villages to the present day (Adler 1996).

Fremont Complex Farmers and Foragers

The Fremont archaeological complex represents an extension of agricultural adaptations into the far northern Colorado Plateau, the Wasatch Plateau, and the eastern Great Basin. The distribution of Fremont ceramics covers an even larger area, ranging from what is now central Nevada into southern Idaho and southwestern Wyoming (e.g., Hockett and Morgenstein 2003).

Although there is evidence for considerable adaptive diversity in the eastern Great Basin and surrounding areas throughout prehistory, this is especially true for the Fremont period. As Madsen and Simms (1998) note, groups attributed to the Fremont complex adopted a variety of subsistence and mobility strategies, and individuals within those groups may have pursued a range of strategies within their lifetimes (see also Barlow 2002; Coltrain and Leavitt 2002). Fremont sites range from fairly large, settled villages, to more ephemeral camps that suggest a high degree of mobility, to alcoves and caves (e.g., Aikens 1970; Bryan 1977). The full range of subsistence strategies from pure hunting and gathering to relatively intensive farming is evident at Fremont sites.

A few characteristics of material culture that are found throughout the Fremont area provided the basis for the original definition of Fremont as an archaeological complex (see discussion in Madsen 1989; Madsen and Simms 1998). It is important to point out, however, that not all of these characteristics are found at all Fremont sites; indeed, there may be no single site where all of them occur together. Moreover, most archaeologists who study the Fremont would agree that the “behavioral approach” to studying variability within Fremont material culture that Madsen and Simms (1998) advocate is more useful than the typological approach of culture historians.

Maize appears in the archaeological record of the southern Wasatch Plateau ca. 150 B.C. (see discussions in Barlow 2002; Madsen and Simms 1998), long after it began to be farmed in the Southwest (e.g., Hard and Roney 1998; Smiley 1994). Fremont subsistence practices were locally variable, but as a generalization, the wild plant and animal resources that were harvested earlier in the region continued to be used along with domesticates (Madsen et al. 2005:42–43).

In the wake of the Glen Canyon Project and its massive output of data, scholars have come to realize that interaction and articulation between Fremont and Ancestral Puebloan groups during the Formative period was nearly constant (Geib 1996:98). The bow and arrow, ceramic technology, and maize horticulture all made their way into the Fremont complex via interaction with Ancestral Puebloan cultures, trickling in at various intervals throughout the Formative period rather than arriving all at once as a package (Simms 2008:209–212).

In the BENM Planning Area, Fremont archaeology is found in the northwestern portion, in places like Beef Basin and Indian Creek (Lohman 1974; Rudy 1955). The iconic Newspaper Rock, in Indian Creek, is one of the best-preserved petroglyph panels in the region and contains elements from Fremont, Ute, Ancestral Puebloan, and post-contact Euro-American contributors (Lohman 1974:12).

Ethnohistoric/Protohistoric/Pueblo IV Period

In Ancestral Puebloan chronology, the Pueblo IV period (A.D. 1290–1500) can be considered the start of the Ethnohistoric/Protohistoric period and is represented by large, plaza-oriented pueblos in Rio Grande and western Pueblo areas. The Colorado Plateau experienced widespread depopulation at most Pueblo communities and aggregation into large villages or “supracommunities,” like at Hopi and Zuni, most likely due to resource depression compounded by drastic climatic changes (Benson and Berry 2009; Varien 2006). In eastern Utah and westernmost Colorado, this period is associated with the Numic expansion. After A.D. 1300, the archaeological record in the BENM area begins to change, as Ancestral Puebloan groups begin to mostly relocate to the east and south of BENM (Spangler et al. 2010:137). During this time ancestors of the Utes, Paiutes, and Navajos are more apparent in the archaeological record. The exact timing of the arrival of these groups in southeastern Utah is also debated, although most researchers believe that all of them had arrived within what is now the boundary of the State of Utah by A.D. 1300 (Janetski 1997:23).

The archaeology of Ute, Paiute, and Navajo occupation in the BENM area is poorly understood by western-trained archaeologists and has only recently been a subject of intensive scrutiny (Spangler et al. 2010). Since 2005, the Comb Ridge Heritage Initiative Project has been documenting Ute and Navajo archaeological sites in the Comb Ridge, Comb Wash, and Butler Wash areas to the east of Cedar Mesa (Hurst and Willian 2011). Most of the Navajo sites they have located in these areas appear to date after ca. 1870 (Hurst and Willian 2011:51). Hurst and Willian report that Ute archaeology is even rarer, despite the known density and historicity of Ute usage of the area. Ute rock writings, on the other hand, is found widely throughout their study area, although large-scale, detailed Ute depictions of humans and animals that are iconic to Cottonwood Wash do not occur there (Hurst and Willian 2011:54–55).

The earliest documented contact between Utes and Europeans in the northern Southwest was the Spanish expedition led by Juan de Oñate in 1626, so most researchers conclude that Utes and Paiutes inhabited the Abajo Mountains region sometime between A.D. 1300 and 1500 (McPherson 2009:58). The oldest confidently dated Navajo structures in this region—hogans and sweat lodges in the White Canyon and upper Comb Wash areas—are tree-ring dated to the early A.D. 1600s (Spangler et al. 2010:151–152).

The Ethnohistoric/Pueblo IV period is characterized by Ancestral Puebloan groups moving away and aggregating in massive communities in the northern Rio Grande and northeastern Arizona. The archaeological record is not well studied during this period, but archaeologists have found evidence of Puebloan peoples returning to BENM to visit ancestral sites. Evidence includes ceramic sherds that do not originate in BENM or not commonly found in this region. Sites from this period typically consist of sparse lithic scatters with low quantities of brown ware ceramics, diagnostic rock writing imagery, and occasionally characteristic wickiup remains. During this period the archaeological record begins to match ethnographic descriptions of Ute, Paiute, and Navajo groups.

3.5.2.2. ENVIRONMENTAL CONSEQUENCES

3.5.2.2.1. Issues

- How would BENM management impact archaeological resources (pre-contact, post-contact, and multicomponent in temporal affiliation) that are either not eligible, eligible or listed in the National Register (i.e., historic properties)?
- How would the BENM resource management plan affect cultural resources, including cultural landscapes, traditional uses, and archaeological historic properties?
- How would the BENM resource management plan provide information and education about cultural resources, including cultural landscapes, traditional uses, and archaeological historic properties, to the public?

3.5.2.2.2. Impacts Common to All Alternatives

Similar to Section 3.5.1 above, management actions that allow surface disturbance are those that result in the greatest impacts to archaeological sites. Management actions involving recreation, travel and transportation, grazing, and wood product harvest are those with the greatest potential to impact archaeological sites. The relative impacts of each alternative can be evaluated by examining the number of documented archaeological sites found within a given management prescription area. Other management actions that may impact cultural resources through ground disturbance are granting of a ROW and vegetation management.

Under all alternatives considered, recreation is expected to increase within BENM. Accordingly, impacts associated with increased visitation are anticipated to impact important archaeological resources, including those from the pre-contact and post-contact temporal periods. Increased visitation to archaeological sites may impact them through increased surface trampling, establishment of social trails across sites with associated surface erosion, and an increased likelihood for casual artifact collecting. When carefully managed, however, visitation to archaeological sites can provide important educational opportunities to the public. Under certain recreation management alternatives, designated recreation areas or zones would affect the allowable recreation activities and thus limit the potential for impacts. For example, Doll House RMZ is established under Alternatives A, B, and C, and Doll House MZ is established under Alternative D, but specific allowable activities vary between alternatives. Additionally, Grand Gulch is included within the broader Cedar Mesa SRMA under Alternatives A, B, and C, and under Cedar Mesa MA under Alternative D. All such implementation-level recreation management actions would be developed in coordination with the BEC.

Travel and transportation within the Monument would continue under all alternatives but would be actively managed to provide safe and reasonable access while protecting BENM objects. Under all alternatives, new and ongoing vehicular use in areas where use is currently limited could impact archaeological resources by providing greater access to those resources; however, new and ongoing vehicular use would be managed to ensure the travel network supports education and

protection of BENM objects by siting roads and trails in locations which allow the public to better understand the cultural landscape without impacting objects. Moreover, under all alternatives, no areas are designated as OHV open.

Livestock grazing would continue under all alternatives. Grazing can impact archaeological sites through surface trampling, livestock wallowing, and establishment of livestock trails through sites. Under each management alternative, allowable grazing activity areas are established, each of which could differentially affect the potential impact of grazing to archaeological sites. In general, where grazing is made available there is greater potential impact to archaeological sites than in areas where grazing activity is limited or prohibited.

Wood product harvest activities would continue under all alternatives. Wood product harvest can impact archaeological sites in ways very similar to OHV use by simply providing for increased use and access to areas that may contain documented or unknown sites. Each management alternative designates certain areas as open or closed to wood product harvest. Areas where such harvests are disallowed would provide greater protection to archaeological sites from wood product harvest activities than those areas that are open.

ROW grants are expected to continue within the Monument under all alternatives. Although a ROW grant itself does not necessarily yield impacts to archaeological resources, the activity for which the grant is issued may. It follows that areas where ROW grants are not allowed would provide greater protection to archaeological resources than in areas where such grants are permitted.

Under all alternatives, actions associated with vegetation management are expected to occur. For all such vegetation management actions, impacts to archaeological resources would be actively considered with goals to protect culturally important plants and to incorporate Traditional Indigenous Knowledge into the management techniques of vegetation communities. Under certain alternatives, vegetation management methods are allowed that may impact archaeological resources through surface disturbance.

Under all alternatives, wildfire protection activities and fuels management projects would implement techniques and outcomes, including incorporating Traditional Indigenous Knowledge, to benefit cultural resource preservation and resiliency in the event of a wildfire. Moreover, ESR and restoration efforts following wildfires would be implemented to protect and sustain resources, including cultural resources, from the impacts of wildfire such as erosion.

3.5.2.2.3. Impacts under Alternative A

Under Alternative A, lands within BENM would be managed according to prescriptions provided by the existing 2020 ROD/MMPs, 2008 Monticello RMP, or 1986 Manti-La Sal LRMP, as amended. All known archaeological sites found within SRMAs and/or ERMAs would be managed for recreational visitation under this alternative, up to and including signage and stabilization to respond to damage or potential damage. Table 3-75 provides the number of documented archaeological sites (pre-contact, post-contact, and multicomponent in temporal affiliation) and National Register status for SRMAs and/or ERMAs under Alternative A. Under this alternative, for example, no camping or campfires would be allowed within the Doll House RMZ.

Under Alternative A, OHV use is managed by designating areas or zones of appropriate use. Table 3-75 provides the number of documented archaeological sites and their National Register status for OHV travel limitation areas under Alternative A.

Table 3-75. Documented Archaeological Sites by Management Action under Alternative A

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
SRMAs/ERMAs	8	1,516	796	1,398	3,718
Travel and Transportation Management					
OHV closed	3	367	159	451	980
OHV limited	6	1,670	1,001	2,613	5,290
Grazing					
Available/Suitable	9	1,992	1,148	3,008	6,157
Trailing	0	15	4	27	46
Trailing/Emergency	0	4	0	21	25
Unavailable/Not suitable	2	216	75	639	932
Wood Product Harvest					
Open	4	1,256	849	2,219	4,328
Closed	7	834	331	887	2,059
Lands and Realty					
ROW open	5	1,144	737	1,951	3,837
ROW avoidance	5	733	319	765	1,822
ROW exclusion	3	369	169	497	1,038

Although the relationship between OHV use and impacts to archaeological resources is complex, in general, increased access to archaeological sites by OHVs correlates with increased impacts to archaeological resources. Accordingly, areas with closed or limited OHV access would generally provide greater protection to archaeological resources and fewer associated impacts.

Under Alternative A, grazing is managed through establishment of areas where grazing access is controlled. Table 3-75 shows the number of documented archaeological sites and the National Register status that are in areas available to grazing, unavailable/not suitable for grazing, or available for trailing and/or emergency grazing under Alternative A. Cattle grazing has the potential to impact archaeological sites through inadvertent surface disturbance by cattle trampling and animal aggregation around watering and feeding locations. Accordingly, areas where grazing is limited (i.e., trailing, trailing/emergency, or unavailable/not suitable) would provide greater protection from surface disturbance of archaeological sites than would areas that are available/suitable for grazing.

Under this alternative, wood product harvest is managed through establishment of areas that are open and areas that are closed to harvest. Table 3-75 shows the number of documented archaeological sites and National Register status for designated wood product harvest management areas under Alternative A. Timber harvest has the potential to impact archaeological sites through direct surface disturbance during harvest activities. It follows that areas within which wood product harvest is limited would provide greater protection to archaeological sites than areas with fewer timber harvest restrictions.

Under Alternative A, lands and realty actions are managed through establishment of areas that are open to ROW authorization, areas that are avoided, and areas that are excluded from ROW grants. Table 3-75 shows the number of documented archaeological sites and National Register status that are in areas available to these ROW authorization restrictions under Alternative A. Although a ROW grant itself does not impact archaeological resources, the activity for which the grant is issued may. It follows that areas where ROW grants are not allowed or are avoided would provide greater protection to archaeological resources than in areas where such grants are permitted

Alternative A does not explicitly specify or constrain available vegetation management methods. Accordingly, management could include all available tools, including mechanical methods that could directly damage archaeological sites.

3.5.2.2.4. Impacts under Alternative B

Table 3-76 provides the National Register status and number of documented archaeological sites (pre-contact, post-contact, and multicomponent in temporal affiliation) for RMAs, OHV travel limitation areas, grazing management areas, and wood product harvest management areas under Alternative B.

Table 3-76. Documented Archaeological Sites by Management Action under Alternative B

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
SRMAs/ERMAs	8	1,161	525	1,059	2,753
Travel and Transportation Management					
OHV closed	3	512	275	1,273	2,063
OHV limited	6	1,535	898	1,850	4,289
Grazing					
Available/Suitable	9	1,992	1,148	2,997	6,146
Trailing	0	15	4	39	58
Trailing/Emergency	0	4	0	20	24
Unavailable/Not suitable	2	223	80	700	1,005
Wood Product Harvest					
Open	6	1,703	997	2,614	5,320
Closed	3	335	165	449	952
Lands and Realty					
ROW open	1	82	17	39	139
ROW avoidance	6	1,661	1,001	2,637	5,305
ROW exclusion	3	332	159	452	946

The number of documented archeological sites located within SRMAs and/or ERMAs established by Alternative B are shown in Table 3-76. For recreation management, Alternative B prioritizes direct intervention at archeological sites where recreational impacts are occurring. For example, under this alternative, improvements would be made to the Butler Wash Interpretive Site, the Mule Canyon Interpretive Site, and to the Newspaper Rock Interpretive Site among several others.

Because those interventions might be things like adding signs near or in a site or defining a pathway through a site (for example, Seven Kivas) it would cause more direct changes to the fabric of more sites. Such changes would be made in collaboration with the BEC, in a controlled manner, providing for a decreased likelihood of inadvertent impacts from visitors. In other areas like the Doll House RMZ, overnight camping and campfires would not be allowed.

In general, areas that are closed to OHV access would provide greater protection of archaeological sites by limiting easy access to those locations. Under Alternative B, 1,083 more previously documented archaeological sites are located in OHV closed areas; however, there are 1,001 fewer sites located in OHV limited areas when compared with Alternative A. Alternative B would provide for fewer impacts to documented archaeological sites in areas closed to OHV access than would Alternative A.

Table 3-76 shows the number of documented archaeological sites and National Register status in areas available, unavailable, and open for trailing and/or emergency under Alternative B. Under this alternative, approximately comparable numbers of known archaeological sites are found in areas that are available, trailing only, or trailing/emergency use. Areas designated as unavailable/not suitable for grazing under Alternative B include 73 more documented archaeological sites than does the similar designated area under Alternative A.

Table 3-76 shows the number of documented archaeological sites and their National Register status for designated wood product harvest areas under Alternative B. Under this alternative, 992 more documented archaeological sites are found in open harvest areas and 1,107 fewer sites are found in closed harvest areas than under Alternative A. Alternative B exposes more documented archaeological sites to timber harvest related impacts in open harvest areas and protects fewer sites in closed harvest areas than does Alternative A.

The number of documented archeological sites located within lands and realty ROW restriction areas established by Alternative B are shown in Table 3-76. Areas that are excluded from ROW authorizations or those where such authorizations are avoided would provide greater protection from ROW associated impacts than would those areas that are open to ROW grants. Under Alternative B, 3,391 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative B, vegetation management would include all available tools, including those (e.g., mechanical methods) that could impact archaeological resources through surface disturbance.

3.5.2.2.5. Impacts under Alternative C

Table 3-77 provides the National Register status and number of documented archaeological sites (pre-contact, post-contact, and multicomponent in temporal affiliation) for RMAs, OHV travel limitation areas, grazing management areas, and designated wood product harvest areas under Alternative C.

Table 3-77. Documented Archaeological Sites by Management Action under Alternative C

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
SRMAs/ERMAs	8	1,161	525	1,059	2,753

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Travel and Transportation Management					
OHV closed	3	584	305	1,546	2,438
OHV limited	6	1,484	872	1,580	3,942
Grazing					
Available/Suitable	9	1,992	1,148	2,997	6,146
Trailing	0	15	4	39	58
Trailing/Emergency	0	4	0	20	24
Unavailable/Not suitable	2	223	80	700	1,005
Wood Product Harvest					
Open	6	1,703	997	2,614	5,320
Closed	3	335	165	449	952
Lands and Realty					
ROW open	-	-	-	-	-
ROW avoidance	6	1,703	1,002	2,594	5,305
ROW exclusion	3	339	163	473	978

The number of documented archeological sites located within SRMAs and/or ERMAs established by Alternative C are shown in Table 3-77. Alternative C provides more direct intervention (i.e., interpretive signs and stabilization to certain sites) at documented archaeological sites, such as sites within Indian Creek Corridor (which includes Newspaper Rock and Shay Canyon, as well as several panels and small structures near climbing walls), and Trail of the Ancients (Mule Developed, Butler Developed, dinosaur tracks, etc.); however, it restricts these sorts of more direct interventions within other areas in favor of more permits and off-site management. Permit restrictions to address damage could include additional stipulations, lower group sizes, or changes to the allocation (total number of people allowed in a time period). Other off-site information could include public education, as well as websites, printed materials, audio productions, etc. Alternative C would have less overall change to the fabric of sites caused by big stabilization actions, but would have more potential for irreversible, inadvertent damage by self-directed visitors. Alternative C is most similar to Alternative A.

When compared with Alternative A, there would be 1,458 more sites in OHV closed but 1,348 fewer sites in OHV limited areas under Alternative C. Overall, Alternative C would provide for fewer impacts to documented archaeological sites by including more documented sites in OHV closed areas than would Alternative A.

Grazing and wood product harvest management under Alternative C is identical to that of Alternative B.

Under Alternative C there are no areas of the Monument that are open for ROW authorizations. The number of documented archeological sites located within ROW avoidance and ROW exclusion areas established by Alternative C are shown in Table 3-77. Under Alternative C, 3,423 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative C, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed. Under Alternative C, however, light-on-the-land methods would be used in certain special designation areas such as designated wilderness, WSAs,

and lands managed for wilderness characteristics. Limiting vegetation treatment methods within these special designation areas would minimize impacts to archaeological resources from associated ground disturbance.

3.5.2.2.6. Impacts under Alternative D

Table 3-78 provides the number of documented archaeological sites (pre-contact, post-contact, and multicomponent in temporal affiliation) for recreation management, OHV travel limitation areas, grazing management, and wood product harvest under Alternative D.

Table 3-78. Documented Archaeological Sites by Management Action under Alternative D

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
MAs	8	961	365	816	2,150
Travel and Transportation Management					
OHV closed	4	797	302	983	2,086
OHV limited	4	837	546	475	1,862
Grazing					
Available/Suitable	8	1,937	1,096	2,913	5,954
Trailing	1	75	58	133	267
Trailing/Emergency	0	4	0	20	24
Unavailable/Not suitable	5	482	243	1,082	1,812
Wood Product Harvest					
Open	6	1,703	997	2,614	5,320
Closed	3	335	165	449	952
Lands and Realty					
ROW open	-	-	-	-	-
ROW avoidance	6	1,381	870	2,085	4,342
ROW exclusion	4	839	356	1,124	2,323

The number of documented archeological sites located within MAs established by Alternative D are shown in Table 3-78. Under Alternative D, there would be fewer interventions by the agencies and the BEC overall (on- or off-site) than in Alternative A because it de-emphasizes both physical intervention (i.e., signs and stabilization) and permits; however, there would be less area available for recreational uses in general as more area would be closed to dispersed camping because under this alternative all inventoried LWC would be OHV closed, which would close many small spur roads used for dispersed camping. Under this alternative, for example, no new SUPs would be issued for the Doll House RMZ and existing permits would not be renewed. This alternative would also provide less opportunity to educate the public about the Tribal Nations connections to the BENM cultural landscape or how to appropriately view archeological sites.

Compared with Alternative A, there would be 1,106 more sites in OHV closed areas and 3,428 fewer sites in OHV limited areas under Alternative D. Overall, Alternative D would provide for fewer impacts to documented archaeological sites by including more documented sites in OHV closed areas than would Alternative A.

Table 3-78 shows the number of documented archaeological sites and National Register status in areas available/suitable, unavailable/not suitable, and open for trailing/emergency under Alternative D. Under this alternative, 203 fewer documented archaeological sites are found in areas available/suitable for grazing and 880 more sites are found in areas unavailable/not suitable for grazing than under Alternative A. Alternative D exposes fewer documented archaeological sites to grazing-related impacts in areas available to grazing and protects more sites in areas unavailable/not suitable for grazing than does Alternative A.

Wood product harvest management under Alternative D is identical to that of Alternative B and C.

Similar to Alternative C, there are no areas of the Monument that are open for ROW authorizations under Alternative D. The number of documented archeological sites located within ROW avoidance and ROW exclusion areas established by Alternative D are shown in Table 3-78. Under Alternative D, 3,805 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative D, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed. Under Alternative D, however, light-on-the-land methods are encouraged throughout the Monument wherever practical. Limiting surface-disturbing vegetation treatment methods across the Monument wherever practical would minimize impacts to archaeological resources from such ground disturbances.

3.5.2.2.7. Impacts under Alternative E

Table 3-79 provides the number of documented archaeological sites (pre-contact, post-contact, and multicomponent in temporal affiliation) for recreation management, OHV travel limitation areas, and grazing. Woodlands management is not addressed under Alternative E.

Table 3-79. Documented Archaeological Sites by Management Action under Alternative E

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
Outback	4	1040	653	852	2,549
Front Country	1	114	46	66	227
Passage	0	62	38	59	159
Remote	5	1,168	643	2,302	4,118
Travel and Transportation Management					
OHV closed	3	566	284	1,305	2,158
OHV limited	6	1,515	898	1,836	4,255
Grazing					
Available/Suitable	9	1,992	1,148	2,997	6,146
Trailing	0	15	4	39	58
Trailing/Emergency	0	4	0	20	24
Unavailable/Not suitable	2	223	80	700	1,005
Lands and Realty					
ROW open	-	-	-	-	-
ROW avoidance	4	627	379	1,690	2,700

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
ROW exclusion	9	1,677	881	1,552	4,119

Alternative A does not establish recreation zones, and a direct comparison between alternatives cannot be made; however, assuming that visitor access would be actively managed under the recreation zones provided by Alternative E, Alternative E would provide archaeological sites with considerable protection from recreation-related visitor impacts. For example, under this alternative, agencies would collaborate with the BEC to ensure that management of Doll House Ruin is consistent with Traditional Indigenous Knowledge and Tribal expertise. Additionally, agencies would collaborate with the BEC to maintain or improve stewardship of locations such as the Newspaper Rock Interpretive Site.

As noted above, areas that are closed to OHV access would generally provide greater protection of archaeological sites by limiting easy access to those locations. Under Alternative E, 1,178 more previously documented archaeological sites are located in OHV closed areas; however, there are 1,035 fewer documented sites located in OHV limited areas under Alternative E. By eliminating easy access to remote archaeological sites from OHVs in areas closed to OHV travel, Alternative E would provide for fewer impacts to documented archaeological sites than would Alternative A.

Table 3-79 shows the number of documented archaeological sites and National Register status in areas available/suitable, unavailable/not suitable, and open for trailing/emergency under Alternative E. Under this alternative, grazing would be the same as under Alternative B. Actions under Alternative E, however, including prioritizing review and processing of grazing permits and leases; identifying subareas of allotments necessary for closure; reassessing stocking levels and season of use; and identifying resource thresholds, monitoring, and automatic responses related to land health and/or impacts to cultural and sacred resources, could provide additional protection to archaeological sites from grazing compared to Alternative B.

Like Alternative C, no areas of the Monument would be open for ROW authorizations under Alternative E. The number of documented archeological sites located within ROW avoidance and ROW exclusion areas established by Alternative E are shown in Table 3-79. Under Alternative E, 3,959 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative E, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed when necessary to protect BENM objects. Under Alternative E, however, vegetation management methods would emphasize Traditional Indigenous Knowledge and/or natural processes. Limiting surface-disturbing vegetation treatment methods across the Monument wherever practical would minimize impacts to archaeological resources from such ground disturbances.

3.5.2.2.8. Cumulative Impacts

Recreation and tourism are expected to increase regionally and to accordingly increase within BENM. Such increases in visitation will likely bring increased OHV use and associated access to more and more remote archaeological sites. Additional visitation to these more remote locations will likely have an associated impact to these sites. A simple increase in foot traffic at archaeological sites establishes social trails, increases casual collection of surface artifacts, and accelerates erosion.

Wildfire and other natural forces will continue to stress resources within BENM. In the case of wildfire, sensitive materials and objects may be damaged or destroyed, but post-fire conditions may threaten sites through intensified erosion or other post-fire processes. Additionally, the removal of the vegetative cover also encourages unauthorized motorized use within burn areas. Fluctuations in precipitation, freeze-thaw cycles, and seasonal access to the Monument are also stressing archaeological sites. High-intensity rainfall may alter erosional patterns and accelerate structural decay, while fluctuations in weather patterns may permit a wider window of visitor access.

A number of RFFAs could impact archaeological resources. Future actions, including House on Fire Trailhead, Bluff River Trail, Salt Creek Trail Reconstruction, and Utah Back Country Pilot Association Dark Canyon Airstrip have the potential to increase visitation to either known or currently undocumented archaeological sites. Moreover, proposed improvements to the Goosenecks and Hamburger Rock Campgrounds could draw more visitors to the area that may result in increased recreation-related impacts. Finally, new ground disturbance from future actions such as Indian Creek Allotment Range Improvements, Emergency Repair: UDOT San Juan Bridge Repair, ROW UTU-96101 for Geotechnical bore holes, Cottonwood Wash Bridge Replacement EA, and Flats Water Wells and Kane Fence could each impact either known or undocumented archaeological sites.

3.5.3. *Historic Communities, Historic Resources*

BLM policy defines cultural resources to include archaeological and historic localities (BLM 2004:2). This section separately addresses post-contact historic period communities and resources to more closely align with their discussion in the 2022 BEITC LMP (see Appendix L).

3.5.3.1. AFFECTED ENVIRONMENT

More than a century of research in the Planning Area and the surrounding region has provided researchers with a wealth of information on the lifeways and cultural traditions of southeastern Utah. Much of this received wisdom is described and summarized in culture history sections of archaeological survey and excavation reports, in an occasional regionally specific archaeology or history textbook, and in peer-reviewed journal articles. The primary objective of this section is to provide a summary of this century of accumulated knowledge, organized as a regional culture history. This section summarizes the documented post-contact history of the area from the time of Euro-American contact to present.

The rich post-contact history of the BENM area is discussed in Proclamation 10285. Euro-American settlement of the region was facilitated by the historic Hole-in-the-Rock Trail, which bisects a portion of the Monument, and historic cattle ranching cabins dot the BENM landscape. Scorp Cabin in the Dark Canyon Wilderness section of the BENM Planning Area is just one particularly notable example. Western outlaws Butch Cassidy and the Sundance Kid made extensive use of the BENM area, particularly along the Outlaw Trail and within Hideout Canyon—both located within the BENM Planning Area.

3.5.3.1.1. Post-contact Historical Context

The Historic period refers to the time recorded by Euro-American written history. The Historic period in Utah started with the first Euro-American explorers trekking through the region and continues to the present day. The post-contact history of the inventory area can be divided into four major periods: Early Euro-American Exploration and Settlement (A.D. 1765–1880); Industry and Euro-

American Population Growth (A.D. 1880–1929); the Great Depression and World War II (A.D. 1929–1945); and the Postwar period (A.D. 1945–present).

Early Euro-American Exploration and Settlement (1765–1880)

Spanish mission expeditions represented some of the first Euro-American explorations into the West, and these expeditions paved the way for later fur trading and settlement. Expansion of the Spanish frontier into Alta California required establishing a land route—the Spanish Trail—between present-day Monterrey, California, and Santa Fe, New Mexico. The first known Spanish expedition into the San Juan River corridor to the east of BENM was led by Juan Maria Antonio de Rivera in 1765, and it followed the San Juan River to the present-day locations of Aneth and Bluff, Utah. The 1776–1777 expedition by Fathers Francisco Atanasio Domínguez and Silvestre Vélez de Escalante in search of a route from Santa Fe, New Mexico, to the California coast did not cross the BENM Planning Area (Black and Metcalf 1986:18), but explorers and fur traders used the detailed information about the region and its inhabitants, as well as their maps.

Stockmen were also early entrants to the region, beginning in the mid-1870s (Peterson 1974:46). Many of these cowboys came with their herds from Colorado; others came from other locations in Utah (Peterson 1974:48). Several cattlemen settled near La Sal, but a few found the lands near the Abajo Mountains (also known as the Blue Mountains).

Friction between BEC Tribal inhabitants of the Bears Ears region and Euro-American settlers was common in the mid-1800s, culminating in examples such as the Long Walk of the Navajo—also called the Long Walk to Bosque Redondo—which began in 1864. During the forced marches of the Long Walk, BEC Tribal people were forcibly relocated from their ancestral lands in and around the Bears Ears area to eastern New Mexico. In all, there were more than 50 forced marches that occurred as part of the Long Walk displacement and more than 200 BEC Tribal people died during the events. Manuelito, or Hastiin Ch'il Haajini was a principal leader of the Navajo during the Long Walk period and was reportedly born and raised in the immediate Bears Ears vicinity.

BEC Tribes were subject to many treaties and agreements with the United States government during this period. Oftentimes the result of these treaties or agreements was the loss of land or, like the Long Walk of the Navajo, forced relocation from ancestral lands. For example, the Brunot Treaty of 1873 relinquished Ute land in the vicinity of San Juan Mountain and set aside a narrow strip of land as the Southern Ute reservation. Agreements during this period also established Tribal reservations for many BEC Tribes. The Hopi Reservation was established in 1882.

Industry and Euro-American Population Growth (1880–1929)

The earliest recorded non-Indigenous settlement in the southern portion of San Juan County was established by Peter Shirts, alternately spelled “Shurtz” in Perkins et al. (1957:28). In 1887, he built a home where Montezuma Creek meets the San Juan River (McPherson 1995:96). In June of 1879, Shirts greeted an exploration party sent by the Church of Jesus Christ of Latter-day Saints (the church) to the Montezuma Creek area (McPherson 1995:97; Perkins et al. 1957:24–28). The exploring party built Fort Montezuma on the San Juan River, not far from the mouth of Montezuma Creek (McPherson 1995:97). These settlers were followed by more church settlers who eventually took the Hole-in-the-Rock route to what would become Bluff. The Hole-in-the-Rock route involved widening a cleft in the rock rim above the Colorado River and then developing “a road below the steep cliff-face” and a route out of the canyon along the river (McPherson 1995:98). It took from November 1879 until the end of January 1880 before the work was completed and the party could progress by carefully lowering the wagons through the new gap and ferrying them across the Colorado River (McPherson 1995:98; Miller 1966:109). The Hole-in-the-Rock route followed some

existing trails in the area and is considered one of the keystones of early church exploration and settlement in San Juan County.

The settlers built additional roads, including one from the top of Clay Hill Pass down to Whirlwind Bench, one from San Juan Hill up and over Comb Ridge, and Comb Wash Road (Miller 1966:132–133, 138). By April 6, 1880, settlers had reached Cottonwood Wash and chose to stop their journey there instead of traveling another 18 miles east to Montezuma Creek. They named this location Bluff (McPherson 1995:103–104; Miller 1966:139–140).

San Juan County was officially incorporated in 1880 from Iron, Kane, and Piute Counties by the Utah Territorial Legislature (McPherson 1995:319). The San Juan River flooded in 1884, washing away dams, channels, and the community of Montezuma Creek (McPherson 1995:103). By 1885, some of the settlers began moving out of the fort into the county to find better farming and cattle lands due to difficulties with irrigation ditches, the general lack of water, and poor crops (McPherson 1995:103; Perkins et al. 1957:64–66). Nearby locations were problematic because private landowners, such as Harold and Edmund Carlisle, the English owners of the Kansas and New Mexico Cattle and Land Company, already held a large portion of the lands nearby (McPherson 1995:105–106). By 1887, work to lay out a new town in the north fork of Montezuma Canyon began at the request of Francis Hammond, church stake president. The new town was originally to be named Hammond, but it was eventually named Monticello after Thomas Jefferson's estate (McPherson 1995:106–107; Perkins et al. 1957:96; Van Cott 1990:256). The Homestead Act of 1862, the Desert Land Act of 1877, and the Enlarged Homestead Act of 1909 further encouraged the development of the region by providing access to inexpensive public land made available in part by forced Indigenous peoples relocation campaigns, like the Long Walk discussed above (McPherson 1995:110), removal acts, EOs, treaties, and military campaigns.

The church settlers experienced some conflict as they expanded into and laid claim to the territory of the BEC Indigenous peoples in the Planning Area. Tensions increased as the settlers and Indigenous people disagreed on grazing areas, water usage, and settlement locations.

The settlers at Bluff began farming potatoes, fruits, alfalfa, and corn, while the settlers in the upper country grew small grains, alfalfa, and garden crops (Perkins et al. 1957:276). These crops were dependent on irrigation from mountain runoff or nearby running water sources, such as the San Juan River (Perkins et al. 1957:276). The region was better suited for dry farming, given the difficulty of irrigating many of the elevated areas. In addition to farming, ranching continued to grow in popularity, and by the mid-1880s, cattle were not the only livestock roaming the region. Flocks of sheep, owned by Navajos and Euro-Americans, had been imported and were competing with cattle for food. Although some cattlemen shifted to sheep or integrated them into their cattle operations, the drought and overgrazing meant less grazing feed was available. By 1904, many outfits had both cattle and sheep to reduce losses (McPherson 1995:177). Many of the flocks were cared for by Hispanic herders from Colorado and New Mexico, many of whom would settle in Monticello.

Prospecting for precious metals also brought Euro-Americans to the area. Cass Hite's discovery of placer gold in Glen Canyon triggered a rush in 1883, but no major deposits were found (McPherson 1995:242; Perkins et al. 1957:269). The Abajo Mountains saw a fair share of prospectors in 1892, with more than 300 claims staked, but prospectors spent more money than they earned (McPherson 1995:246; Perkins et al. 1957:269–270). The next big gold rush focused on the San Juan River, with much of the activity around and below Mexican Hat, Utah, between 1892 and 1893 (McPherson and Kitchen 1999). While the gold rushes never quite panned out, copper was found in Red Canyon and in the Abajo Mountains, but mining and processing of the ore did not happen until 1916 (McPherson 1995:248–249; Perkins et al. 1957:270).

While oil was initially discovered along the San Juan River in 1882 by E. L. Goodridge, no active drilling attempts were made until 1907 (Harline 1963:295; McPherson 1995:249). By 1909, eight oil companies had drilled “twenty-five holes, 80 percent of which were producing, and had established a field that eventually encompassed the lands between Bluff and Slickhorn Canyon” (McPherson 1995:249). However, the wells sunk near Mexican Hat and Goodridge were the only ones that produced significant amounts of oil, and the boom ended by 1912 (Harline 1963:296; McPherson 1995:251).

The Great Depression and World War II (1929–1945)

As was the case for many communities throughout the West, resource exploitation and extractive industries were firmly established in Utah’s economy, which suffered a severe financial blow when the stock market crash in late 1929 heralded the onset of the Great Depression. The earlier postwar slump in San Juan County left it ill-equipped to endure further economic strain. The lack of a substantial manufacturing and industrial base aggravated the situation. Unemployment rates soared, as did delinquencies on loans and taxes, further eroding the county’s economy. Utah’s farmers received assistance from the federal government through the Agricultural Adjustment Act, which controlled production and provided crop subsidies (Hinton 1986:271–272).

The area was also impacted by the 1934 Taylor Grazing Act, which regulated the use of public grazing land (McPherson 1995:180–181). The act’s intended purpose was to stabilize the sometimes economically volatile livestock industry and stop the misuse and abuse of public lands through regulatory control of those lands by the Grazing Service (a precursor of the BLM). With beef and wool prices at unprecedented lows, hundreds of area ranchers could not afford the price of permits to graze their livestock on public lands (McPherson 1995:181). In addition, a statewide drought in 1934 dried up waterholes and springs “that had never been known to go dry,” causing a lack of range forage (Arrington 1986:253).

As the nation continued to languish in the throes of the depression, the U.S. government established programs of institutional relief. President Franklin Roosevelt’s New Deal funded various aid programs, such as the Works Progress Administration (WPA) and the Civilian Conservation Corps (CCC), to help struggling communities. CCC crews stationed in several areas in San Juan County built roads, fences, corrals, and flood control projects, culverts, telephone lines, and campgrounds (Baldrige 1971:364–377; CCC Legacy 2015; McPherson 1995:224). CCC Camp DG-34, located south of Blanding, made significant contributions to water control features and roads by constructing reservoirs, improving wells and springs, and constructing miles of truck trails through the Abajo Mountains (including the Blanding–Montezuma truck trail) (Baldrige 1971:171; McPherson 1995:224–225). The presence and importance of the WPA, the CCC, and other work relief programs in Utah remain evident today in buildings, water systems, transportation features, sidewalks, landscaping, and parks.

With the nation’s entry into World War II in 1941, Utah’s attention turned toward supporting the war effort. Increased demands for agricultural products helped the county recover from the economic downturn. Local farmers participated in the Food for Victory program sponsored by the Farm Security Administration. Cattle prices were restored to pre-depression levels and the demand for wool increased prices, benefiting local sheep ranchers (McPherson 1995:182–183).

Because of the complex grammar and mutual unintelligibility of the Navajo language with even other closely related Indigenous dialects, Navajo Code Talkers were instrumental to the success of the U.S. military in the Pacific theater of World War II. Common but combat-important terms, concepts, and tactics were given descriptive terms in Navajo, and native Navajo speakers who had enlisted in the military translated important tactical messages between units in combat.

As the war drew to a close, both returning soldiers and a decreased national demand for agricultural products resulted in an inevitable shift in the economy. A decline in the demand for wool led to yet another weak period for the sheep industry; however, the cattle industry was one of the few industries to weather the postwar years with success. The industry adopted technological changes that improved breeding and productivity. Combined with a growing national and international reputation for high-quality beef, these changes solidified the cattle industry in the area's social and economic spheres.

The Postwar Period (1945–present)

To prevent an unstable economy after the war, higher pricing remained in effect until the end of 1946 on all consumer items except sugar, rice, and rent (Bishop 1997:201–202). The uranium boom, beginning with Charlie Steen's discovery in 1952, would fuel the region's economy for the next three decades.

In 1964, President Lyndon B. Johnson signed a Congressional act creating Canyonlands National Park (Barnes 1988:154). The park was expanded by 87,000 acres in 1971 (Barnes 1988:154; Schmieding 2008:xiii). Located in the northwestern portion of the Planning Area, the park serves as a popular recreation and tourist destination for photography, hiking, mountain biking, 4WD and OHV use, and other outdoor activities. More parks and designated areas (such as WSAs) followed the success of Canyonlands National Park.

The Four Corners region was one of the few areas in and around Utah to enjoy an economic boom during the postwar period, fueled by the U.S. government's drive to establish a domestic stockpile of refined yellowcake uranium oxide. While most uranium mining and milling operations were centered around Lisbon Valley and Monticello, other major uranium mining locations included White Canyon (where the Happy Jack Mine was located) and Cottonwood Wash (Chenoweth 2006:536). According to the EPA, nearly 30 million tons of uranium ore were extracted from Navajo lands between 1944 and 1986 (EPA 2022). Many Navajo people worked at these mines, often locating their families near the mines and mills. Federal buying programs and production incentives drove companies to produce a surplus, which was achieved by the mid-1960s. By the mid-1970s, public awareness of the health risks associated with uranium mining and processing spread. The growing costs associated with long-term adverse effects of uranium milling, a more-than-sufficient stockpile of uranium oxide, and President Ronald Reagan's steps to eliminate federal subsidies for specific industries resulted in a near total collapse of the domestic uranium industry in 1984. The fallout from uranium mining on Tribal lands in the Four Corners region is still felt today. Environmental degradation, compromised aquifers, and the physiological effects of radiation exposure to Indigenous miners and their families are ongoing. To address these impacts, the Navajo Nation has filed a case with the Inter-American Commission on Human Rights.

For Tribal Nations that currently manage land in the area immediately adjacent to the Monument, active economic development is ongoing. Today, economic development on the Navajo Nation is assisted by the Division of Economic Development, one of the divisions within the Executive Branch of the Navajo Nation government. The Division of Economic Development assists both Tribal and nonnative businesses operating within the Navajo Nation in commercial, tourism, industrial, and small business sectors. For the Ute Mountain Ute, the Tribal Division of Economic Development is involved with economic development initiatives from within the reservation and from national and international enterprises interested in developing sustainable business relationships with the Ute Mountain Ute Tribe. The division oversees several Tribal Enterprises, including the Ute Mountain Ute Casino and Resort, Weeminuche Construction Authority, the Ute Mountain Ute Farm & Ranch, the Ute Mountain Ute Pottery/Gallery, and the Ute Mountain Ute Travel Plaza.

The last 50 years in the region has seen growth in terms of both population and economy. Regional leaders have developed plans to continue the expansion of the economic base and improve the quality of life for residents well into the next century. Although ranching is still conducted, recreational tourism is now the largest industry in the county.

3.5.3.2. ENVIRONMENTAL CONSEQUENCES

3.5.3.2.1. Issues

- How would BENM management impact post-contact historic communities and/or post-contact historic archaeological locations that are either not eligible, eligible, or listed in the National Register (i.e., historic properties)?
- How would the BENM resource management plan affect historic communities and post-contact historic properties?
- How would the BENM resource management plan provide information and education about historic communities and post-contact historic properties to the public?

3.5.3.2.2. Impacts Common to All Alternatives

As with cultural resource management in Section 3.5.1 and archaeological sites in Section 3.5.2 above, management actions that allow surface disturbance are those that result in the greatest impacts to historic communities and post-contact historic resources. Management actions involving recreation, travel and transportation, grazing, and wood product harvest are those with the greatest potential to impact post-contact historic localities. The relative impacts of each alternative can be evaluated by examining the number of documented post-contact historic sites found within a given management prescription area. Other management actions that may impact cultural resources through ground disturbance are granting of a ROW and vegetation management.

Under all alternatives considered, recreation is expected to increase within BENM. Accordingly, impacts associated with increased visitation are anticipated to impact important historic resources, including Historic-period archaeological sites and historic communities. Increased visitation to post-contact historic sites may impact them through increased surface trampling, establishment of social trails across sites with associated surface erosion, and an increased likelihood for casual artifact collecting and damage to existing standing structures. When carefully managed, however, visitation to these sites can provide important educational opportunities to the public. Under certain recreation management alternatives, designated recreation areas or zones would affect the allowable recreation activities and thus limit the potential for impacts. All such implementation-level recreation management actions would be developed in coordination with the BEC.

Travel and transportation within the Monument would continue under all alternatives but would be actively managed to provide safe and reasonable access while protecting BENM objects. Under all alternatives, new and ongoing vehicular use in areas where use is currently limited would impact historic resources by providing greater access to those resources; however, new and ongoing vehicular use would be implemented to ensure the travel network supports education and protection of BENM objects by siting roads and trails in locations which allow the public to better understand the historic landscape without impacting objects. Moreover, under all alternatives, no overland OHV use is allowed. Impacts to the Hole-in-the-Rock Trail and to Scorup Cabin under all alternatives are expected to be similar to OHV-related impacts to other post-contact historic resources because these resources are accessible by OHVs in all alternatives.

Livestock grazing would continue under all alternatives. Similar to the impacts of grazing to archaeological sites, grazing can impact post-contact historic sites through surface trampling,

livestock wallowing, and establishment of livestock trails through sites. Under each management alternative, allotments and pastures are designated as available/suitable or unavailable/not suitable for grazing, and the designation of these acreages could differently affect the potential impact of grazing to post-contact historic sites. In general, where grazing is made available, there is greater potential impact to such sites than in areas where grazing activity is limited or disallowed.

Wood product harvest activities would continue under all alternatives. Like impacts to archaeological sites, wood product harvest can impact post-contact historic sites in ways very similar to OHV use by simply providing for increased use and access to areas that may contain documented or unknown sites. Each management alternative designates certain areas as open or closed to wood product harvest. Areas where such harvests are disallowed would provide greater protection to post-contact historic sites from wood product harvest activities than those areas that are open.

ROW grants are expected to continue within the Monument under all alternatives. Although a ROW grant itself does not necessarily yield impacts to historic communities and post-contact historic resources, the activity for which the grant is issued may. It follows that areas where ROW grants are not allowed would provide greater protection to historic communities and post-contact historic resources than in areas where such grants are permitted.

Under all alternatives, actions associated with vegetation management are expected to occur. For all such vegetation management actions, impacts to historic communities and post-contact historic resources would be actively considered with goals to protect culturally important plants, and to incorporate Traditional Indigenous Knowledge into the management techniques of vegetation communities. Under certain alternatives, vegetation management methods are allowed that may impact historic communities and post-contact historic resources through surface disturbance.

Under all alternatives, wildfire protection activities and fuels management projects would implement techniques and outcomes, including incorporating Traditional Indigenous Knowledge, to benefit cultural resource preservation and resiliency in the event of a wildfire. These projects and techniques could reduce the potential for wildfire to destroy historic sites. Moreover, ESR and restoration efforts following wildfires would be implemented to protect and sustain resources, including cultural resources, from impacts of a wildfire such as erosion.

3.5.3.2.3. Impacts under Alternative A

Under Alternative A, lands within BENM would be managed according to prescriptions provided by the existing 2020 ROD/MMPs, 2008 Monticello RMP, and 1986 Manti-La Sal LRMP, as amended. Similar to archaeological resources, historic resources within SRMAs and or ERMAs would be managed for recreational visitation under this alternative, up to and including signage, and stabilization to respond to damage or potential damage. Table 3-80 provides the number of documented historical sites and National Register status for SRMAs and/or ERMAs under Alternative A.

Table 3-80. Documented Post-contact Historic Sites by Management Action under Alternative A

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
SRMAs/ERMAs	3	80	52	39	174

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Travel and Transportation Management					
OHV closed	2	9	13	5	29
OHV limited	1	117	93	62	273
Grazing					
Available/Suitable	3	125	104	66	298
Trailing	0	1	0	1	2
Trailing/Emergency	0	0	0	0	0
Unavailable/Not suitable	2	7	9	7	25
Wood Product Harvest					
Open	1	96	77	47	221
Closed	3	36	34	24	97
Lands and Realty					
ROW open	1	89	77	39	206
ROW avoidance	3	39	44	24	110
ROW exclusion	2	26	19	9	56

Under Alternative A OHV use is managed by designating areas or zones of appropriate use. Table 3-80 provides the number of post-contact historic sites for OHV travel limitation areas under Alternative A.

Although the relationship between OHV use and impacts to historic resources is complex, in general, increased access to post-contact historic sites by OHVs correlates with increased impacts to those resources. Accordingly, areas with closed or limited OHV access would generally provide greater protection to historic resources and fewer associated impacts.

Under Alternative A, grazing is managed through establishment of areas where grazing access is controlled. Table 3-80 shows the number of documented post-contact historic sites and National Register status for designated grazing management areas under Alternative A. Like archaeological sites, cattle grazing has the potential to impact post-contact historic sites through inadvertent surface disturbance by cattle trampling and animal aggregation around watering and feeding locations. Accordingly, areas where grazing is limited (i.e., trailing, trailing/emergency, or closed) would provide greater protection from surface disturbance of post-contact historic sites and communities than would areas that are available for grazing.

Under this alternative, wood product harvest is managed through establishment of areas that are open and areas that are closed to harvest. Table 3-80 shows the number of documented post-contact historic sites and National Register status located within designated wood product harvest management areas under Alternative A. Timber harvest has the potential to impact post-contact historic sites and communities through direct surface disturbance during harvest activities. It follows that areas within which wood product harvest is limited would provide greater protection to these sites than areas with fewer timber harvest restrictions.

Under Alternative A, lands and realty actions are managed through establishment of areas that are open to ROW authorization, areas that are avoided, and areas that are excluded from ROW grants.

Table 3-80 shows the number of documented post-contact historic sites and National Register status that are in areas available to these ROW authorization restrictions under Alternative A. Although a ROW grant itself does not impact post-contact historic resources, the activity for which the grant is issued may. It follows that areas where ROW grants are not allowed or are avoided would provide greater protection to post-contact historic resources than in areas where such grants are permitted.

Vegetation management activities that may impact historic communities or post-contact historic resources through ground disturbance are not addressed under Alternative A.

3.5.3.2.4. Impacts under Alternative B

Table 3-81 provides the number of documented post-contact historic sites within RMAs, OHV travel limitation areas, grazing management areas, and designated wood product harvest areas under Alternative B.

Table 3-81. Documented Post-contact Historic Sites by Management Action under Alternative B

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
SRMAs/ERMAs	3	56	41	34	134
Travel and Transportation Management					
OHV closed	2	19	37	23	81
OHV limited	1	109	72	45	227
Grazing					
Available/Suitable	3	125	104	66	298
Trailing	0	1	0	1	2
Trailing/Emergency	0	0	0	0	0
Unavailable/Not suitable	2	7	12	10	31
Wood Product Harvest					
Open	1	119	91	62	273
Closed	2	8	15	5	30
Lands and Realty					
ROW open	0	8	6	2	16
ROW avoidance	1	117	92	62	272
ROW exclusion	2	9	14	5	30

The number of documented post-contact historic sites located within SRMAs and/or ERMAs established by Alternative B are shown in Table 3-81. For recreation management, Alternative B prioritizes direct intervention at locations where recreational impacts are occurring like that for archaeological sites. Because those interventions might be things like adding signs near or in a site or defining a pathway through a site, they may cause more direct changes to the fabric of more sites. Such changes would be made in collaboration with the BEC, providing for a decreased likelihood of inadvertent impacts from visitors.

In general, areas that are closed to OHV access would provide greater protection of post-contact historic sites by limiting easy access to those locations. Under Alternative B, 52 more post-contact historic sites that have been previously documented would be located in OHV closed areas; however, 46 fewer sites would be located in OHV limited areas. Alternative B would provide for fewer impacts to documented historic resources in areas closed to OHV access than would Alternative A.

Table 3-81 shows the number of documented post-contact historic sites and National Register status within designated grazing management areas under Alternative B. Under this alternative, roughly comparable numbers of known historic locations are found in areas that are available/suitable, trailing only, or trailing/emergency use. Areas designated as unavailable/not suitable for grazing under Alternative B include six more documented post-contact historic sites than does the similar designated area under Alternative A.

Table 3-81 shows the number of documented historic locations and their National Register status within designated wood product harvest areas under Alternative B. Under this alternative, 52 more documented sites are found in open harvest areas and 66 fewer sites are found in closed harvest areas than under Alternative A. Alternative B exposes more documented post-contact historic sites to timber harvest related impacts in open harvest areas and protects fewer such sites in closed harvest areas than does Alternative A.

The number of documented post-contact historic sites located within lands and realty ROW restriction areas established by Alternative B are shown in Table 3-81. Areas that are excluded to ROW authorizations or those where such authorizations are avoided would provide greater protection from ROW associated impacts than would those areas that are open to ROW grants. Under Alternative B, 136 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative B, vegetation management would include all available tools, including those (e.g., mechanical methods) that could impact historic communities or post-contact historic resources through surface disturbance.

3.5.3.2.5. Impacts under Alternative C

Table 3-82 provides the number of documented post-contact historic sites within RMAs, OHV travel limitation areas, grazing management areas, and designated wood product harvest management areas under Alternative C.

Table 3-82. Documented Post-contact Historic Sites by Management Action under Alternative C

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
SRMAs/ERMAs	3	56	41	34	134
Travel and Transportation Management					
OHV closed	1	11	20	16	48
OHV limited	1	42	16	6	65

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Grazing					
Available/Suitable	3	125	104	66	298
Trailing	0	1	0	1	2
Trailing/Emergency	0	0	0	0	0
Unavailable/Not suitable	2	7	12	10	31
Wood Product Harvest					
Open	1	119	91	62	273
Closed	2	8	15	5	30
Lands and Realty					
ROW open	-	-	-	-	-
ROW avoidance	1	117	92	62	272
ROW exclusion	2	11	15	5	33

The number of documented post-contact historic sites located within SRMAs and/or ERMAs established by Alternative C are shown in Table 3-82. Alternative C provides more direct intervention at documented post-contact historic sites and communities like interpretive signs and stabilization to certain sites, for example, Sand Island, and the Bicentennial Highway; however, it restricts these sorts of more direct interventions within other areas in favor of more permits and off-site management. Permit restrictions to address damage could include additional stipulations, lower group sizes, or changes to the allocation (total number of people allowed in a time period). Other off-site information could include public education, as well as websites, printed materials, audio productions, etc. Alternative C would have less overall change to the fabric of post-contact historic sites and communities caused by stabilization actions, but would have more potential for irreversible, inadvertent damage by self-directed visitors. Alternative C is most similar to Alternative A.

When compared with Alternative A, there would be 19 more sites in OHV closed areas, but 208 fewer sites in OHV limited areas under Alternative C. Overall, Alternative C would provide for fewer impacts to documented post-contact historic sites by including more documented sites in OHV closed areas than would Alternative A; however, more post-contact historic sites would be exposed to impacts from OHV access under Alternative C in areas where OHV access is limited.

Grazing and wood product harvest management under Alternative C would be identical to that of Alternative B.

Under Alternative C, there are no areas of the Monument that are open for ROW authorizations. The number of documented post-contact historic sites located within ROW avoidance and ROW exclusion areas established by Alternative C are shown in Table 3-82. Under Alternative C, 139 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative C, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed. Under Alternative C, however, light-on-the-land methods would be used in certain special designation areas such as designated wilderness, WSAs, and lands managed for wilderness characteristics. Limiting vegetation treatment methods within these special designation areas would minimize impacts to historic communities or post-contact historic resources from associated ground disturbance.

3.5.3.2.6. Impacts under Alternative D

Table 3-83 provides the number of documented post-contact historic sites within RMAs, OHV travel limitation areas, grazing management areas, and designated wood product harvest areas under Alternative D.

Table 3-83. Documented Post-contact Historic Sites by Management Action under Alternative D

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
MAs	3	48	34	30	115
Travel and Transportation Management					
OHV closed	2	21	24	24	71
OHV limited	1	67	43	20	131
Grazing					
Available/Suitable	3	119	103	64	289
Trailing	0	7	2	2	11
Trailing/Emergency	0	0	0	0	0
Unavailable/Not suitable	2	24	25	19	70
Wood Product Harvest					
Open	1	119	91	62	273
Closed	2	8	15	5	30
Lands and Realty					
ROW open	-	-	-	-	-
ROW avoidance	1	115	90	48	254
ROW exclusion	2	24	45	28	99

The number of documented post-contact historic sites located within MAs established by Alternative D are shown in Table 3-83. Like that described for archaeological sites, under Alternative D, there would be fewer interventions by the agencies and the BEC overall (on- or off-site) than in Alternative A because it de-emphasizes both physical intervention (i.e., signs and stabilization) and permits; however, there would be less area available for recreational uses in general as more area would be closed to dispersed camping because under this alternative all inventoried LWC would be OHV closed, which would close many small spur roads used for dispersed camping. This alternative would also provide less opportunity to educate the public about the Tribal Nations connections to the BENM cultural landscape or how to appropriately view archeological sites.

Under Alternative D, there would be 42 more post-contact historic sites within OHV closed areas when compared with Alternative A; however, there would be 142 fewer post-contact historic sites in OHV limited areas. This would include significantly more post-contact historic sites within OHV closed areas than would Alternative A but fewer within OHV limited areas than other alternatives. Overall, Alternative D would provide for fewer impacts to documented post-contact historic sites by including more documented sites in OHV closed areas than would Alternative A.

Table 3-83 shows the number of documented post-contact historic sites and National Register status within designated grazing management areas under Alternative D. Under this alternative, nine fewer documented post-contact historic sites are found in areas designated as available/suitable to grazing and 45 more sites are found in areas designated as unavailable/not suitable for grazing than under Alternative A. Alternative D exposes fewer documented archaeological sites to grazing-related impacts in areas designated as available/suitable to grazing and protects more sites in areas designated as unavailable/not suitable for grazing than does Alternative A.

Wood product harvest management under Alternative D is identical to that of Alternative B and C.

Similar to Alternative C, there are no areas of the Monument that are open for ROW authorizations under Alternative D. The number of documented post-contact historic sites located within ROW avoidance and ROW exclusion areas established by Alternative D are shown in Table 3-83. Under Alternative D, 187 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative D, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed. Under Alternative D, however, light-on-the-land methods are encouraged throughout the Monument wherever practical. Limiting surface-disturbing vegetation treatment methods across the Monument wherever practical would minimize impacts to historic communities or post-contact historic resources from such ground disturbances.

3.5.3.2.7. Impacts under Alternative E

Table 3-84 provides the number of documented post-contact historic sites for recreation zones, OHV travel limitation areas, and grazing management areas under Alternative E. Wood product harvest is not addressed under Alternative E.

Table 3-84. Documented Post-contact Historic Sites by Management Action under Alternative E

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
Recreation Management					
Outback	4	1,040	653	852	2,549
Front Country	1	114	46	66	227
Passage	0	62	38	59	159
Remote	5	1,168	643	2,302	4,118
Travel and Transportation Management					
OHV closed	0	6	3	3	12
OHV limited	1	107	72	45	225
Grazing					
Available/Suitable	3	125	104	66	298
Trailing	0	1	0	1	2
Trailing/Emergency	0	0	0	0	0
Unavailable/Not suitable	2	7	12	10	31
Lands and Realty					
ROW open	-	-	-	-	-

National Register Status by Management Action	Listed	Eligible	Not Eligible	Unevaluated/ No Information	Total
ROW avoidance	1	69	66	33	169
ROW exclusion	5	77	82	43	207

Alternative E does not establish recreation zones, and a direct comparison between alternatives cannot be made; however, under Alternative E, the public would be encouraged to stay on trails when hiking in the Monument. Trails and trail systems would be designated to help guide and focus visitors to culturally appropriate places. Trails and/or areas may also be closed, and areas may be made unavailable to off-trail hiking, to protect BENM objects and provide additional protection from recreation-related visitor impacts.

As noted above, areas that are closed to OHV access would generally provide greater protection of post-contact historic sites by limiting easy access to those locations. Under Alternative E, 17 fewer post-contact historic sites that have been previously documented would be located in OHV closed areas, and 48 fewer sites would be located in OHV limited areas when compared with Alternative A. Alternative E would allow impacts to more documented historic resources than would Alternative A.

Under Alternative E, grazing would be the same as under Alternative B. Additional guidance under Alternative E, however, including prioritizing review and processing of grazing permits and leases; identifying subareas of allotments necessary for closure; reassessing stocking levels and season of use; and identifying resource thresholds, monitoring, and automatic responses related to land health and/or impacts to cultural and sacred resources, could provide additional protection to archaeological sites from grazing compared to Alternative B.

Like Alternative C, no areas of the Monument are open for ROW authorizations under Alternative E. The number of documented post-contact historic sites located within ROW avoidance and ROW exclusion areas established by Alternative E are shown in Table 3-84. Under Alternative E, 210 more sites are found in ROW avoidance or ROW exclusion areas than under Alternative A.

Under Alternative E, chaining is disallowed throughout the Monument, but other mechanical vegetation treatment methods are allowed only when necessary to protect BENM objects; however, under Alternative E, vegetation management methods would emphasize Traditional Indigenous Knowledge and/or natural processes. Limiting surface-disturbing vegetation treatment methods across the Monument wherever practical would minimize impacts to historic communities or post-contact historic resources from such ground disturbances.

3.5.3.2.8. Cumulative Impacts

Recreation and tourism are expected to increase regionally and to accordingly increase within BENM. Such increases in visitation will likely bring increased OHV use and associated access to more and more remote historic localities. Additional visitation to these more remote locations will likely have an associated impact to these sites. A simple increase in foot traffic at historic localities establishes social trails and accelerates erosion.

Wildfire and other natural forces will continue to stress resources within BENM. In the case of wildfire, sensitive materials and objects may be damaged or destroyed, but post-fire conditions may threaten sites through intensified erosion or other post-fire processes. Additionally, the removal of the vegetative cover also encourages unauthorized motorized use within burn areas. Fluctuations in precipitation, freeze-thaw cycles, and seasonal access to the Monument are also stressing historic localities. High-intensity rainfall may alter erosional patterns and accelerate

structural decay, while fluctuations in weather patterns may permit a wider window of visitor access.

A number of RFFAs could impact historic resources. Future actions, including House on Fire Trailhead, Bluff River Trail, Salt Creek Trail Reconstruction, and UT Back Country Pilot Association Dark Canyon Airstrip have the potential to increase visitation to post-contact historic sites. Moreover, proposed improvements to the Goosenecks and Hamburger Rock Campgrounds could draw more visitors to the area, which may result in increased recreation-related impacts. Finally, new ground disturbance from future actions such as Indian Creek Allotment Range Improvements, Emergency Repair: UDOT San Juan Bridge Repair, ROW UTU-96101 for Geotechnical bore holes, Cottonwood Wash Bridge Replacement EA, and Flats Water Wells and Kane Fence could each impact historic localities.

3.5.4. Fuels, Wildfire, and Prescribed Fire

3.5.4.1. AFFECTED ENVIRONMENT

BLM and USDA Forest Service fire management plans (FMPs) describe desired resource conditions related to fire management in terms of Fire Regime Groups (FRGs) (Table 3-85) and VCCs (Table 3-86). The VCCs refer to the degree of vegetation departure (VDEP) from historic to present conditions. VCCs are described in detail in Table 3-86. This information is derived from LANDFIRE (2022) and is used to prioritize areas for vegetation management.

Table 3-85. Fire Regime Groups

Historical Fire Regime	Fire Frequency	Severity
I	0 to 35 years	Low to mixed, less than 75% of dominant overstory vegetation replaced
II	0 to 35 years	Replacement severity, greater than 75% of dominant overstory vegetation replaced
III	35 to 200 years	Low to mixed
IV	25 to 200 years	High severity, stand-replacing fire
V	200+ years	High severity, stand-replacing fire

Table 3-86. Vegetation Condition Classes

VCC	Description
IA: Very Low, VDEP 0–16 IB: Low, VDEP 17–33	Fire regimes are within historic time frames. The loss of key ecosystem components from the occurrence of fire is low. Areas are healthy and functioning adequately.
IIA: Low to Moderate, VDEP 34–50 IIB: Moderate to High, VDEP 51–66	Fire regimes have been moderately altered from their historic time frames by increased or decreased fire frequency and are at moderate risk of losing key ecosystem components. Areas are unhealthy and the rate of deterioration is expected to increase moderately to rapidly.
IIIA: High, VDEP 67–83 IIIB: Very High, VDEP 84–100	Fire regimes have been significantly altered from historic time frames and loss of key ecosystem components is high. Areas are unhealthy and nonfunctioning.

FRGs within the Monument are provided in Table 3-87. The majority of acreage (54%) is within FRG III, which represents low- to mixed-severity fires. Additionally, 12% and 13% of the Monument is within FRGs IV and V, respectively, which represent high-severity, stand-replacement fires. Although

severe in nature, these fires may be within the natural fire regime. Approximately 11% of the Monument has been described as barren and likely represents slickrock regions with little to no vegetation cover.

Table 3-87. Current Bears Ears National Monument Fire Regime Groups

Fire Regime Groups	BLM (acres)	USDA Forest Service (acres)	State (acres)	Private (acres)	Total (acres)	Percentage of Monument
No Data	39,528	97,685	2,813	415	140,623	9
Barren	136,111	9,497	13,154	843	159,605	11
FRG III	571,126	166,048	57,711	6,925	801,810	54
FRG IV	148,645	8,058	14,625	1,346	172,674	12
FRG V	161,395	3,937	22,605	3,499	191,436	13
Sparsely Vegetated	18,354	3,879	1,541	47	23,821	2
Water	371	8	21	36	436	<1
Total	1,075,530	289,112	112,470	13,111	1,490,225	100

Note: Totals may not sum exactly due to rounding. Data were not obtained for part of NBNM (180 acres).

Current VCCs are presented in Table 3-88. The most common VCC in the Monument (47% of total acreage) is within VCC IB, which represents fire regimes within historic time frames, where the loss of key ecosystem components from the occurrence of fire is low. These areas are considered ecologically healthy and are functioning adequately. VCC IIA is the next largest fire regime, covering 29% of the Monument; which represents fire regimes that have been low to moderately altered from their historical time frames. VCC IIB comprises 10% of the Monument and represents a moderate to high departure from historic fire regimes. VCC IIA and VCC IIB VCC categories represent areas within BENM where fire regimes have been low to moderately or moderately to highly altered from their historical time frames, respectively (see Table 3-85). The changes have occurred by either increased or decreased fire frequency and are at moderate risk of losing key ecosystem components. These areas are unhealthy, and the rate of deterioration is expected to increase moderately to rapidly. Less than 1% (0.28%, 4,203 acres) of the Monument is in VCC IIIA, which represents a high departure from the historic fire regime. This fire regime has been significantly altered from its historic time frame, loss of key ecosystem components is high, and the affected areas are unhealthy and nonfunctioning.

Table 3-88. Current Bears Ears National Monument Vegetation Condition Classes

VCCs	BLM (acres)	NFS (acres)	NBNM (acres)	State (acres)	Private (acres)	Total (acres)	Percentage of Monument
Barren	136,111	9,497	19	13,154	843	159,625	11
Burnable Agriculture	750	178	<1	50	792	1,773	<1
Burnable Urban	2,007	778	23	705	821	4,334	<1
Non burnable Agriculture	438	160	<1	43	401	1,042	<1
Non burnable Urban	2,200	545	36	238	111	3,130	<1
Sparsely Vegetated	18316	3,854	4	1,539	46	23,759	2

VCCs	BLM (acres)	NFS (acres)	NBNM (acres)	State (acres)	Private (acres)	Total (acres)	Percentage of Monument
VCC IB	495,012	149,956	65	55,090	5,938	706,061	47
VCC IIA	334,355	63,868	24	33,986	2,782	435,015	29
VCC IIB	85,382	56,671	8	7,630	1,335	151,027	10
VCC IIIA	587	3593	<1	16	6	4,203	<1
Water	371	8	<1	21	36	436	<1
Total	1,075,530	289,111	180	112,472	13,112	1,490,405	100

Note: Totals may not sum exactly due to rounding.

Across BENM, many fire-adapted vegetative communities exist, including grasslands, sagebrush, mountain shrub, aspen, and mix conifer communities (BLM 2018). Some communities, such as salt desert shrub and blackbrush, are not adapted to frequent fire and instead have historically experienced long fire return intervals.

The spread of invasive, nonnative species has altered fire regimes across the landscape. For example, cheatgrass and other vegetation types can alter fire-return intervals and expand the species' range post-fire. These species can therefore facilitate the expansion of invasive species, decrease the area's biological resource values, and increase fire behavior across the landscape.

Table 3-89, Table 3-90, and Appendix A, Figure 3-36, BENM special fire statistics, 2011–2022, represent the statistics for fire occurrence from 2011 to 2022 (12 years) for all lands administered in BENM. From 2011 to 2022, BENM had an average of approximately 29 fires per year. The majority of these fires (88%) were started naturally by lightning, whereas 8% were human-caused ignitions, and 4% were started by unknown causes. The average acres burned per year is 494 acres, with the average fire size being 17.3 acres; however, larger fires can and do occur. Fires are most likely to occur from May through October but can occur at any time of the year.

Table 3-89. Bears Ears National Monument Fires by Location, Agency, and Acreage, 2011–2022

BLM Number of Fires	BLM Fire Sizes (acres)	NFS Number of Fires	NFS Fire Sizes (acres)	State Number of Fires	State Fire Sizes (acres)	Private Number of Fires	Private Fire Sizes (acres)	Total Number of Fires	Total Fire Size (acres)
167	72	169	5,833	5	7	5	13	346	5,924

Table 3-90. Bears Ears National Monument Fire Statistics, 2011–2022

Year	Natural Ignition Fires	Acres Burned from Natural Ignitions	Human Ignition Fires	Acres Burned from Human Ignitions	Unknown Ignition Fires	Acres Burned from Unknown Ignitions	Total Fires	Total Acres Burned
2011	33	10	2	1	0	0	35	11
2012	29	11	7	1	1	<1	37	12
2013	34	358	2	1	0	0	36	359
2014	22	14	2	1	0	0	24	15
2015	16	8	2	1	0	0	18	9
2016	27	11	3	14	0	0	30	25
2017	31	108	1	<1	0	0	32	108

Year	Natural Ignition Fires	Acres Burned from Natural Ignitions	Human Ignition Fires	Acres Burned from Human Ignitions	Unknown Ignition Fires	Acres Burned from Unknown Ignitions	Total Fires	Total Acres Burned
2018	38	37	2	<1	0	0	40	38
2019	10	5,301	0	0	5	1	15	5,302
2020	14	37	6	1	5	2	25	40
2021	32	6	1	<1	0	0	33	6
2022	20	2	1	<1	0	0	21	2
Total	306	5,902	29	20	11	3	346	5,927

Note: Totals may not sum exactly due to rounding.

3.5.4.1.1. Fuels and Fire Management

Fuels management projects in the area have been increasing recently to improve vegetation resilience to disturbance, including wildfire. Fuels projects over the past 10 years have focused on achieving two goals: 1) reducing fire hazard with an emphasis on WUI areas; and 2) restoring and/or improving VCCs in the Planning Area. These goals are accomplished through interdisciplinary partnerships such as the Utah Watershed Restoration Initiative (UWRI). These partnerships identify priority watersheds to address a variety of interdependent resource issues and improve long-term watershed conservation and restoration. Specific watersheds are then targeted and prioritized for funding through BLM and USDA Forest Service program dollars, with additional coordination and funding prioritized through UWRI. Treatment types include prescribed fire and mechanical and chemical treatments. These treatments are completed for a variety of reasons, including fuels reduction; protecting WUI areas; and improving wildlife habitat, watershed conditions, and rangeland resources. Table 3-91 and Table 3-92 summarize some of the major fuels treatments and vegetation management that have occurred from 2013 to 2021 in the Planning Area. From 2013 to 2021, 9,974 acres of BENM have undergone fuels treatments and vegetation management. These treatments have primarily focused on pinyon-juniper removal, invasive plant management, and fuels reductions. Locations for the various fuels treatments are provided in Appendix A, Figure 3-37, BENM fuels treatments, 2013–2021.

Table 3-91. Bears Ears National Monument BLM-Directed Fuels Treatments and Vegetation Management, 2013–2021

Year	Treatment Name	NFPORS Treatment Type*	Land Manager	Fire Management Unit	Total (acres)
Unknown	1_RTRL San Juan River Chemical	Chemical (herbicide)	BLM	San Juan Basin	10
2013	3_MA - MOFO - Bluff - Bullhog Unit 2	Mastication	BLM and Tribal	San Juan Basin	9
2013	3_MA - MOFO - Bluff - Bullhog Unit 3	Mastication	BLM and Tribal	San Juan Basin	11
2013	3_MA - MOFO - Bluff - Bullhog Unit 4	Mastication	BLM and Tribal	San Juan Basin	21
2013	3_MA - MOFO - Bluff - Herbicide - Unit 3	Chemical (herbicide)	BLM and Tribal	San Juan Basin	11
2013	3_MA - MOFO - Bluff - Herbicide - Unit 4	Chemical (herbicide)	BLM and Tribal	San Juan Basin	21
2013	MOFO - Sand Island - Bullhog - Unit 1	Mastication	BLM, Tribal, and private	San Juan Basin	16
2013	MOFO - Sand Island - Bullhog - Unit 2	Mastication	BLM and Tribal	San Juan Basin	9

Year	Treatment Name	NFPORS Treatment Type*	Land Manager	Fire Management Unit	Total (acres)
2013	MOFO - Sand Island - Bullhog - Unit 3	Mastication	BLM and Tribal	San Juan Basin	11
2013	MOFO - Sand Island - Bullhog - Unit 4	Mastication	BLM and Tribal	San Juan Basin	21
2013	MOFO - Swinging Bridge - Bullhog - Unit 2	Mastication	BLM and Tribal	San Juan Basin	16
2014	3_MA - MOFO - Bluff - Bullhog Waterwheel	Mastication	BLM	San Juan Basin	4
2014	3_MA - MOFO - Bluff - Herbicide	Chemical (herbicide)	BLM and Tribal	San Juan Basin	35
2015	1_HL_MA - MOFO - Bluff - Bullhog	Mastication	BLM, Tribal, and private	San Juan Basin	36
2015	1_HL_MA - MOFO - Bluff - Herbicide	Chemical (herbicide)	BLM, Tribal, and private	San Juan Basin	36
2015	WRI Wildlife Beef Basin Aerial Seed	Seeding	BLM	Cedar Mesa	864
2015	WRI Wildlife Beef Basin Drill Seed	Seeding	BLM	Cedar Mesa	864
2015	WRI Wildlife Beef Basin Herbicide	Chemical (herbicide)	BLM and state	Cedar Mesa	958
2016	1_RTRL San Juan River Bullhog	Mastication	BLM	San Juan Basin	10
2016	1_RTRL San Juan River Pile	Hand pile burn	BLM	San Juan Basin	10
2016	1_RTRL San Juan River Thin	Thinning	BLM	San Juan Basin	10
2016	1_WRI_Dark Canyon II Bullhog	Mastication	BLM	Cedar Mesa	238
2017	1_Dark Canyon 4 PJ Removal Bullhog	Mastication	BLM	Cedar Mesa	1,122
2018	1_Dark Canyon 3 PJ Removal Bullhog	Mastication	BLM and state	Cedar Mesa	661
2018	1_RTRL San Juan River Lop Scatter	Lop and scatter	BLM	San Juan Basin	1
2018	1_San Juan River 2.0 Herbicide	Chemical (herbicide)	BLM and Tribal	San Juan Basin	2
2018	2_Dark Canyon 5 PJ Removal Bullhog	Mastication	BLM and state	Cedar Mesa	913
2019	San Juan River 2.0 Herbicide	Chemical (herbicide)	BLM and Tribal	San Juan Basin	5
2019	San Juan River 2.0 Lop Scatter	Lop and scatter	BLM and Tribal	San Juan Basin	5
2020	1_San Juan River Restoration 3.0 Bullhog	Chipping	BLM and Tribal	San Juan Basin	< 1
2020	1_San Juan River Restoration 3.0 Herbicide	Chemical (herbicide)	BLM and Tribal	San Juan Basin	592
2020	1_San Juan River Restoration 3.0 Thin	Lop and scatter	BLM and Tribal	San Juan Basin	4
2021	2_Bluff River Trail Bullhog	Mastication	BLM and Tribal	San Juan Basin	3

* NFPORS = National Fire Plan Operations and Reporting System. Chemical = herbicide application to kill unwanted (usually invasive) plant species; chipping = mechanical conversion of wood to wood chips; hand pile burn = a prescribed fire used to ignite vegetation piles; lop and scatter = removing the upward extending branches from the tops of felled trees to keep slash low to the ground, to increase the decomposition rate, to lower the fire hazard, or as a pretreatment prior to burning; mastication = a mechanical fuels treatment that changes the structure and size of fuels where vegetation is chopped, ground, or chipped and the resulting material is left on the soil surface; thinning = targeted removal of vegetation, usually to reduce fuel loading.

Table 3-92. Bears Ears National Monument USDA Forest Service–Directed Fuels Treatments and Vegetation Management, 2013–2021

Year	Treatment Name	NFPORS Treatment Type*	Land Manager	Fire Management Unit	Total
2013	Brushy Basin Mechanical	Chipping	USDA Forest Service and BLM	Abajo, Dark Canyon, and Montezuma	471
2014	Brushy Basin Mastication	Chipping	USDA Forest Service	Abajo and Dark Canyon	879
2014	Nizhoni Fire Restoration	Mechanical site preparation for planting	USDA Forest Service	Abajo	31
2014 and 2015	Brush Basin Hand	Machine pile and machine pile burn	USDA Forest Service	Abajo	29
2015	Johnson Creek	Machine pile and machine pile burn	USDA Forest Service	Abajo	168
2016	Johnson Creek	Chipping	USDA Forest Service	Abajo and Dark Canyon	209
2016	Mormon Pasture Mountain	Machine pile	USDA Forest Service	Dark Canyon	937
2016	Nizhoni Mix	Broadcast burn and chipping	USDA Forest Service	Dark Canyon	13
2017	Johnson Creek	Broadcast burn	USDA Forest Service	Abajo and Dark Canyon	132
2018	Johnson Creek	Broadcast burn	USDA Forest Service	Abajo	<1
2018	Johnson Creek	Chipping	USDA Forest Service	Abajo and Dark Canyon	997
2018	Mormon Pasture Mountain	Machine pile	USDA Forest Service	Dark Canyon	722
2019	Johnson Creek	Broadcast burn	USDA Forest Service	Abajo and Dark Canyon	596
2021	Elk Ridge Recovery	Lop and scatter	USDA Forest Service	Dark Canyon	210

* NFPORS = National Fire Plan Operations and Reporting System. Broadcast burn = A prescribed fire ignited in areas with little or no forest canopy present (used in grasslands, shrublands, or oak woodlands); chipping = mechanical conversion of wood to wood chips; lop and scatter = removing the upward extending branches from the tops of felled trees to keep slash low to the ground, to increase the decomposition rate, to lower the fire hazard, or as a pretreatment prior to burning; machine pile = logging equipment is used to pile remaining vegetation, such as tree limbs left behind after marketable material is removed; machine pile burn = a prescribed fire used to ignite vegetation piles; thinning = targeted removal of vegetation, usually to reduce fuel loading.

Paleoecological and archaeological data have demonstrated that historical fuelwood collection and vegetation clearing by Indigenous peoples reduced wildfire extent and severity in southwestern ecosystems, which helped to create more patchy, healthy, and diverse landscapes (Carter et al. 2021; Roos et al. 2021). These vegetation management practices may be especially useful for protecting BENM’s cultural resources and treating overgrown areas that are not suitable for prescribed fire. In the 2022 BEITC LMP, federal agencies are directed to collaborate with BENM Tribal Nations to increase the effectiveness of hazardous fuel reduction programs. Federal agencies are also directed to invite BENM Tribal Nations to participate in wildfire and fuels management agency trainings to gain indigenous perspectives on fire and fuels management.

Prescribed Fire

Prescribed fire is typically used by the BLM and USDA Forest Service to restore natural forest and rangeland conditions and enhance and/or maintain natural resource benefits. A typical prescribed fire burning season on BLM-administered lands consists of burning piles up to 300 acres in aggregate, for the pile-burning season. In ponderosa pine–type communities, BLM management activity can also include mechanical thinning followed by prescribed burning to remove activity-created ground fuels. On NFS lands in ponderosa pine–type communities, a low-intensity broadcast prescription burn is typically done. Most burns thus far have been conducted in VCC III areas with the goal of moving them closer to either VCC I, VCC II, or a combination of the two. Prescribed fire

projects, as well as wildfire managed for resource objectives in the Planning Area, are closely tied to habitat, watershed, and other natural resource objectives and hazardous fuels reduction. At times, these projects are followed by seeding and planting and additional vegetation enhancement work; seeding and planting, however, typically follows natural- and human-caused wildfires. Between 2013 and 2021, multiple prescribed fire projects were carried out on NFS lands in the current BENM Planning Area (see Table 3-91).

Non-commercial Firewood/Fuelwood Collection

Personal non-commercial firewood collection, especially from members of local Tribal Nations, occurs throughout the Monument, typically in forested and woodland (pinyon-juniper) regions.

Historical fire and fuelwood collection by Indigenous peoples in the Southwest was known to reduce wildfire severity and extent and yield more healthy and resilient ecosystems (Roos et al. 2021). BENM has been a homeland for the Ute people and they were known to gather firewood in the region (see Appendix L).

Emergency Stabilization and Rehabilitation

Currently no ESR or Burned Area Emergency Response work has been completed in BENM in the past 10 years. Short-term objectives of ESR actions are to determine the need for and to prescribe and implement emergency treatments to minimize threats to life or property and to stabilize/prevent unacceptable degradation to natural and cultural resources resulting from the effects of fire. ESR guidelines are described in BLM Handbook H-1742-1.

Common Interagency Management Response

The Moab Interagency Fire Center covers federal, state, and private lands in BENM. Fire personnel handle fire management responsibilities such as preparedness, suppression, and extended attack, with dispatching occurring from Moab Interagency Fire Center in Moab, Utah. Response to wildfires will be coordinated with all affected agencies/cooperators regardless of the jurisdiction at the point of ignition. Federal and state agencies are encouraged to collaborate with the BEC to increase the effectiveness of initial wildfire attack. Effective collaboration would help protect structures, facilities, natural resources, and cultural resources (see Appendix L).

BLM Fire Management Plan

The BLM Canyon Country FMP (BLM 2021), which the BLM updates periodically (last updated in 2021), describes fire and fuels management activities in the Moab and Monticello FOs (which cover BENM). The FMP provides for firefighter and public safety and includes fire management strategies, tactics, and alternatives based on direction outlined in the Moab and Monticello RMPs. The FMP identifies values to protect and public health issues, describes fuels and restoration projects, and is consistent with resource management objectives.

Wildfires can be concurrently managed for one or more objectives, as specified in the RMPs and FMP. Objectives can change as a fire spreads across the landscape and are affected by changes in fuels, weather, and/or topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions having different missions and objectives.

Management response to a wildfire on federal land is based on objectives established in the RMPs and FMP. A wildfire may be concurrently managed for more than one objective. Unplanned natural ignitions may be managed to achieve RMP and FMP objectives when risk is within acceptable limits.

Response to wildfires is based on the ecological, social, and legal consequences of the fire. The appropriate management response to the fire is dictated by the following:

- The circumstance under which a fire occurs
- The likely consequences to firefighter/public safety and welfare
- The natural/cultural resource values to be protected

Within the Planning Area, special concern should be given to cultural resource sites. According to the Canyon Country FMP (BLM 2021), generally, protection of cultural resources is site-specific and includes avoidance of archaeological remains. Reintroduction of low-intensity prescribed fire is often recommended for fire-adapted archaeological sites. A qualified Fire Archaeologist is always present whenever bulldozers are employed during suppression events to assure that no National Register-eligible sites are harmed. Cultural resource specialists provide extensive guidance and recommendations as post-fire-rehabilitation efforts are planned and implemented. Compliance with Section 106 of the National Historic Preservation Act (NHPA) and consultation with the State Historic Preservation Office (SHPO) and interested Tribal Nation groups, will be completed on a project-specific basis before decisions are made to carry out fire management activities that could affect cultural resources. Individual fire management activities (e.g., fuels management/reduction, wildfire suppression, and post-wildfire emergency stabilization) carried out under the FMP will be preceded by a complete review of known resources and complementary field surveys, as appropriate, to identify cultural resources that might be affected by any proposed activities.

Fire Management Units (FMUs) are specific land management areas defined by fire management objectives, management constraints, topographic features, access, values to protect, political boundaries, and fuel types. The FMUs were created based on similarities of the specific resource objectives identified in the BLM's Canyon Country FMP 2021 update. An interdisciplinary team developed 15 FMUs that serve to define management objectives, physical characteristics, resource values, and management actions necessary to achieve resource management objectives across the Moab and Monticello FOs, as identified in the current Canyon Country FMP. FMUs have dominant management objectives and preselected fire suppression strategies assigned to accomplish these objectives. Seven of these FMUs cover BLM-administered lands within BENM and are listed in Table 3-93.

USDA Forest Service

Proactive management of wildfires and/or management-ignited fire (prescribed fire) under chosen conditions provides an opportunity to restore fire-adapted ecosystems, decrease fuels, and decrease the risk of future adverse fire outcomes to achieve the desired conditions of an LMP. Decisions and analysis that occur as part of the LMP process provide a foundation for all aspects of fire management: fire planning, strategic fuels planning and implementation, preparedness planning, prevention, mitigation, response, and post-fire rehabilitation. Additionally, direction from the LMP may inform meaningful fuels management objectives in site-specific NEPA analysis. The Manti-La Sal National Forest is currently in the process of updating its LMP (last updated in 1986). This revised draft plan (USDA Forest Service 2020) describes the current and desired fire and fuel conditions, appropriate management strategies, objectives, and guidelines for achieving the desired fire and fuel conditions. Specific to cultural resources, the LMP states that the Manti-La Sal National Forest will “develop and maintain a database with maps for fire sensitive cultural resources and make it available for the fire management and fuels reduction planning and for resource protection during fire management activities within three years of plan decision.” Additionally, the LMP states that wildfire protection activities and fuels management project designs will consider techniques and outcomes that benefit cultural resources preservation and improve resiliency to fire management activities.

The USDA Forest Service no longer uses FMPs. These have been replaced with Spatial Fire Planning contained in the WFDSS and the Fire Management Reference System (FMRS), a collection of both optional and required documents and data for fire program management. These systems were adopted to streamline implementation of the federal fire policy in maintaining and improving the conditions of fire-adapted landscapes in accordance with an LMP's desired conditions, and replace Forest Service Handbook (FSH) 5109.19. Fire management planning will be a continued effort to ensure that guidance represented spatially in WFDSS and the FMRS is consistent with LMP direction, reflecting available fire response options to move from current to desired conditions.

Decisions made in the LMP, developed with public and cooperators input, provide the foundation for Spatial Fire Planning in WFDSS, fire response decisions, and meaningful incident objectives. To achieve the desired wildfire management conditions, LMPs should describe the Desired Wildland Fire Conditions for the Planning Area. These should include how and where wildfire is desired and the standards and guidelines that lead to appropriate management requirements for incident management. Fire management should prioritize fuels treatments, document strategic and incident objectives in WFDSS, and provide the basis for sound risk management for responders. To inform fire management strategy and priorities, LMPs should describe the specific values and resources to be protected from wildfire versus those that benefit from wildfire and compare their relative importance.

Options for wildfire response are included in WFDSS as Strategic Objectives and Management Requirement shapes that are determined from the LMPs. Strategic Objectives and Management Requirements, as well as current conditions (e.g., location, weather, fuels, and time of year) provide the foundation for wildfire response decisions, incident objectives, and strategies and tactics throughout the life of the incident.

3.5.4.1.2. Key Features

Key features include WUI areas and special management areas in the FMUs. Special management areas include ACECs, WSAs, WSRs, and communications sites (see Table 3-93).

Table 3-93. Fire Management Units and their Special Management Areas within the Planning Area

FMU Name	Managing Agency	Acres In BENM	WSAs	WSRs	ACECs
Abajo	USDA Forest Service	11,754	-	-	-
Canyonlands	NPS	137	Butler Wash (4 acres), Indian Creek (19 acres)	-	Indian Creek (1 acre)
Cedar Mesa	BLM	504,486	Bridger Jack Mesa (5,010 acres), Butler Wash (21,996 acres), Cheese Box Canyon (1,313 acres), Fish Creek Canyon (35,603 acres), Mule Canyon (6,171 acres), Road Canyon (23,668 acres), South Needles (15 acres)	Dark Canyon (suitable wild, 1,887 acres)	Shay Canyon (78 acres)
Colorado River Corridor	BLM	911	-	Colorado River (suitable scenic, 789 acres)	-
Dark Canyon	USDA Forest Service	278,008	Mule Canyon (<1 acre)	-	-

FMU Name	Managing Agency	Acres In BENM	WSAs	WSRs	ACECs
Dry Valley	BLM	70,401	Bridger Jack Mesa (107 acres)	-	Lavender Mesa (649 acres), Shay Canyon (42 acres)
La Sal	BLM	2,071	-	-	-
Lockhart Basin	BLM	84,304	Indian Creek (6,535 acres)	Colorado River (suitable scenic, 741 acres)	Indian Creek (3,934 acres)
Montezuma	BLM	53,174	-	-	-
NBNM	NPS	11	-	-	-
San Juan Basin	BLM	482,105	Cheese Box Canyon (13,519 acres), Fish Creek Canyon (10,500 acres), Mancos Mesa (50,844), Road Canyon (28,737 acres)	San Juan River (suitable wild, 1,179 acres)	San Juan River (1,266 acres), Valley of the Gods (22,770 acres)
White Mesa	BIA	2,728	-	-	-
	Total (acres)	1,490,090	204,042	4,596	28,740

Note: - = No acreage of special management area designation within the FMU.

Frequent drought, fire suppression-based forest management tactics, and climate change have worked together to increase forest and rangeland vulnerability. By removing natural fire from fire-dependent ecosystems, drought, insects, and diseases have resulted in increased fuel buildup and alterations to vegetation composition (Goodwin et al. 2021). These forest changes can increase the risk of uncharacteristically large high-severity fires (Goodwin et al. 2021; Schoennagel 2017). In the past few years, fires have grown to record sizes and are burning earlier, longer, hotter, and more intensely than they have in the past (Westerling 2016; Westerling et al. 2006).

The shifting climate, particularly rising temperatures, frequent drought, and the extension of the fire season, are escalating wildfire risk across the Southwest. The length of the fire season in the southwestern United States has increased significantly since 1979, and since the 1970s, the frequency of large fires has increased dramatically. Specifically, the occurrence of large fires has increased by 462% in southwestern U.S. forests (Schoennagel 2017). When accounting for climate change, this pattern is expected to amplify in the future and promote wildfire potential across western U.S. forests (Abatzoglou and Williams 2016).

The primary vegetation trends in the region are in sagebrush shrubland, where grazing and fire exclusion have resulted in pinyon and juniper (as well as other conifer species) encroachment. This trend will increase fuel loads and, consequently, fire behavior. Sagebrush is also transitioning to older age classes, which means increased fuel loads and therefore higher-severity fires. In addition, nonnative species are spreading, which can increase fire risk, especially in areas with heavy cheatgrass prevalence. This occurs mainly in sagebrush, grass, and pinyon-juniper vegetation communities. Changing climate conditions may also impact the spread of nonnative species (BLM 2018).

It is expected that, due to the current fire regime conditions in BENM and factors outside the control of the fire program (e.g., invasive weed control, vegetation management issues, cultural resources protection, drought, and grazing), VCC categories would be maintained at or near their current conditions.

Based on prolonged drought conditions and establishment of invasive species, it is anticipated that the potential for increased fire behavior will continue in lower-elevation sagebrush communities. It

is also anticipated that live and dead fuel loadings in forest stands and conifer/juniper encroachment into aspen and higher-elevation sagebrush communities will continue, increasing the risk for wildfires with potentially uncharacteristic fire effects. Management actions to reduce fire severity, including green strips (vegetative fuel breaks), hazardous fuels reductions, ESR, and Burned Area Emergency Response, could slow the decline of resources.

In 2021, the Bipartisan Infrastructure Law (BIL) was passed. The law provides \$1,055,000,000 for the DOI and \$2,309,200,000 for the USDA Forest Service for fiscal years 2022 to 2026. Priorities for BIL funds will emphasize working collaboratively across boundaries. BIL funds should focus on all actions necessary to conduct effective, efficient wildfire risk reduction, including pre-treatment assessment, implementation, and post-treatment effectiveness evaluation. Community assistance work funded with BIL should ensure there is a federal land nexus. BIL directs funding to the following fuels management categories of action:

- General fuels management work
- Conducting mechanical vegetation thinning, timber harvest, and precommercial thinning
- Planning and conducting prescribed fires and related activities, such as planning, implementing, and monitoring prescribed fire projects
- Developing or improving potential control locations, including fuel breaks
- Working collaboratively across boundaries using agreements, contracts, youth/Tribal, and force account seasonal laborers or work months for permanent full-time staff that will directly support BIL work

3.5.4.2. ENVIRONMENTAL CONSEQUENCES

3.5.4.2.1. Issues

- How do current and proposed fire and fuels management techniques affect ecosystem function, fire regime, cultural resources, and health and human safety?

3.5.4.2.2. Impacts Common to All Alternatives

Under all alternatives, firefighter and public safety would continue to be the primary goals for all fire management decisions and actions in BENM. Establishing priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources would be based on human health and safety, the values to be protected, and the costs of protection. The participating agencies, in collaboration with the BEC and Tribal Nations, would implement a consistent, safe, and cost-effective fire management program through appropriate planning, staffing, training, and equipment.

Fires would also be managed to protect BENM objects and other values at risk, as well as any benefits to resources. Fuels would be proactively managed by the agencies in collaboration with the BEC in BENM to protect BENM objects. Agencies would coordinate with the BEC, Tribal Nations, and state and local government in developing implementation-level fire plans. Through implementation-level fire management planning, management objectives and actions would be established for every area with burnable vegetation, based on sound science and Traditional Indigenous Knowledge, with the consideration of other resource objectives. Wildland fire would be used to protect, maintain, and enhance resources, and when possible, would be allowed to function in its natural ecological role.

Additionally, the agencies would work with the BEC, other partners, and impacted groups and individuals to reduce risks from wildfires to communities and to restore ecosystems. In the event of

a fire incident, the agencies would use the best and current available tools, including Traditional Indigenous Knowledge, sound science, and the WFDSS, in making strategic and tactical decisions for fire response. The 2022 BEITC LMP contemplates agency collaboration with BENM Tribal Nations to increase the effectiveness of hazardous fuel reduction programs. Agencies can also invite BENM Tribal Nations to participate in wildfire and fuels management agency trainings to exchange perspectives on fire and fuels management and guide agency management with Traditional Indigenous Knowledge. Indigenous peoples of the Southwest were known to use low-intensity burns that helped to create diverse and ecologically healthy forests and rangelands (USDA Forest Service 2021). For instance, the fires helped to create and maintain plant and wildlife habitat, aid in nutrient cycling, and bolster ecosystem health (Southwest Climate Adaptation Science Center 2020). A significant departure from these conditions throughout the Southwest occurred in the twentieth century (USDA Forest Service 2021). The use and integration of the concepts and practices of indigenous fire traditions could help BENM meet its fire, forestry, and vegetation management objectives.

Finally, in the event of a fire, ESR and restoration efforts following wildfires may be implemented to protect and sustain natural and cultural resources, public health and safety, and community infrastructure.

Impacts to Ecosystem Function and Fire Regimes

For all alternatives, fire and fuels management would consider the following when assessing impacts to ecosystem function and fire regimes: 1) maintaining existing healthy ecosystems; 2) protecting high-priority subbasins or watersheds including those that are impaired or that support important natural resources; and 3) protection of habitat needs of threatened, endangered, or special status species. Fire and fuels management, when used effectively, can be used to restore natural forest and rangeland fire regimes (i.e., limited VCC departure); enhance and/or maintain natural resource benefits; and maintain existing healthy ecosystems. A primary overarching management action for all alternatives is to use wildland fire to protect, maintain, and enhance natural resources, and, when possible, allow it to function in its natural ecological role. Appendix D describes the Desired Wildland Fire Conditions for multiple vegetation communities in BENM and the actions that are needed to meet these conditions. Fuels treatments, including vegetation, forestry and woodlands (including silvicultural treatments), and rangeland management, for all alternatives would be focused on restoring historical fire regimes to the Desired Wildland Fire Condition (see Appendix D) and VCC, when feasible, so that future wildland fire management can be more easily implemented.

There are multiple fire-adapted vegetation communities within BENM, including grasslands, sagebrush, mountain shrub, aspen, and mixed conifer forests. Fuels treatments, such as natural or prescribed fire in these communities, would be expected to reduce excess woody and fine fuels, restore fire-adapted vegetation, and help maintain natural ecological conditions and functions. Unplanned natural ignitions (usually due to lightning) may be managed to achieve wildland fire management objectives when risk is within acceptable limits. Prescribed fire techniques used to achieve these goals include broadcast burning, underburning, and hand pile burning. Natural and prescribed fire play an important role in meeting these conditions. Overall, natural and prescribed fire would help maintain the VCCs and FRGs at or close to historical conditions. Natural fire, however, may not be suitable in certain areas. For instance, plant communities that have had significant VCC departures from their historical conditions (e.g., sagebrush communities with a high degree of woody encroachment or other plant communities with a high degree of invasive grass cover) may have unnaturally high and hazardous fuel loads. Under these conditions, these vegetation communities may require mechanical or chemical fuel reduction prior to prescribed or natural fire use.

Other fuels treatments would consist of manual removal methods. These methods may be used for all alternatives with a primary goal of restoring ecosystems and protecting natural resources. The exact method and timing would depend on underlying resource management goals. These treatment options vary and depend upon resource management objectives, but typically consist of mechanical treatments such as mowing, chopping, or chipping/grinding (brush cutter), tilling, or cutting; manual treatments such as lop and scatter, hand cutting (chainsaw or handsaw) and hand piling (with subsequent prescribed fire); and chemical spraying or biological treatments (e.g., insects, goats, or sheep) (see Section 3.4.4 for additional information on fuels reduction treatments). Manual removal methods are typically prioritized in regions where there are significant VCC departures from historical conditions, typically due to invasive plants and woody encroachment. Fuels treatments would also prioritize complementary land management practices. For instance, under all alternatives, wood product harvest would be allowed on all BLM-administered lands in areas where the BLM has approved fuels treatment or habitat management projects. Wood product harvest would also be allowed on NFS lands within BENM to support fuels treatment projects, as needed. These activities would also improve and restore healthy forest conditions (i.e., return VCCs closer to their historical conditions), reduce hazardous fuels, and restore natural fire regimes. The activities could be complementary to mechanical fuels reduction activities by helping to remove slash and other down woody material.

For all alternatives, it is not appropriate to use wildfire to meet resource objectives when the following resources and values may be impacted and there are no reasonable resource protection measures to protect such resources and values: 1) areas known to be highly susceptible to post-fire cheatgrass or invasive weed invasion; 2) important terrestrial and aquatic habitats and riparian habitat; 3) non-fire-adapted vegetation communities; and 4) areas of soil with high or very high erosion hazard. Unplanned wildfires could put these sensitive resources at risk or lead to further ecological degradation. Wildfire suppression when these resources are at risk would be the primary response tactic. Under all alternatives, floodplains, riparian habitat, and aquatic resources would also be subject to fire suppression, but only if it is necessary to protect riparian habitats.

In LWC being managed to protect wilderness characteristics (BLM-administered lands only) and all other applicable lands (including lands managed by the BLM and USDA Forest Service) fire suppression would use MIST. These are strategies and tactics that effectively meet suppression and resource objectives with the least environmental, cultural, and social impacts (USDA 2023).

For all alternatives, ESR and restoration treatments following wildfires would be implemented to protect and sustain natural resources, if needed. Treatment actions would be designed according to the type and severity of wildfire impacts and resource management goals. Regarding ecosystem function and fire regimes, ESR, and restoration treatments are implemented when any of the following conditions apply (BLM 2021):

- There is a need to protect soils that are highly susceptible to erosion.
- Perennial grasses and forbs (fire-tolerant plants) are not expected to provide soil and watershed protection within 2 years.
- Unacceptable vegetation, such as noxious weeds, may readily invade and become established and alter the natural fire regime.
- Shrubs and forbs are a crucial habitat component for wintering mule deer, antelope, or other special status species.
- Stabilization and rehabilitation are necessary to meet RMP/EIS resource objectives, including rangeland seedings.
- It is necessary to protect water quality.

- It is necessary to quickly restore threatened, endangered, or special status species habitat populations to prevent impacts.

Impacts to Cultural Resources

For all alternatives, fire and fuels management would consider the protection of cultural resources and/or cultural landscapes and high-priority subbasins or watersheds (including watersheds that support important cultural resources) when assessing impacts to cultural resources. A primary overarching management action for all alternatives is to enhance cultural resource resilience to fire, including the use of Traditional Indigenous Knowledge, to benefit cultural resource preservation and resiliency. Thus, where appropriate, wildfire (both natural and prescribed fire) would be managed to protect cultural resources and/or cultural landscapes. During any fuels reduction or fire suppression work a qualified archaeologist would be present to ensure that no National Register-eligible sites are harmed. Cultural resource specialists would provide extensive guidance and recommendations for post-fire rehabilitation efforts. The BLM will comply with Section 106 of the NHPA and will consult with the SHPO and interested Tribal Nations on a project-specific basis before decisions are made to carry out fire management activities that could affect cultural resources. Individual fire management activities, including fuels management/reduction, wildfire suppression, and post-wildfire emergency stabilization, will be preceded by a complete review of known cultural resources and previously conducted field surveys, as appropriate, to identify cultural resources that might be affected by the proposed activities (BLM 2021).

Additionally, to enhance cultural resource resilience to fire, wildfire protection activities and fuels management projects would implement Traditional Indigenous Knowledge and techniques as to benefit preservation and resiliency of cultural resources. Additionally, during implementation-level planning, agencies would collaborate with the BEC to develop a database with maps for fire-sensitive cultural resources (including wildlife and plants associated with cultural practices) and make it available for fire management, fuels reduction planning, and resource protection during fire management activities within 3 years of issuance of this plan (the RMP/EIS) decision. Finally, potential future wildfire impacts on cultural resources exacerbated by climate change would be proactively managed, reduced, and mitigated by the agencies, in collaboration with the BEC and Tribal Nations.

Under all alternatives, hazardous fuels reduction treatments would be used, where appropriate, to protect cultural resources (these treatment methods are described above). Furthermore, during planned fuels reduction activities, agencies would collaborate with the BEC to protect and/or enhance culturally important plant communities. Traditional Indigenous Knowledge would also be used across BENM to manage fire-prone landscapes (i.e., forests, woodlands, and rangelands). Because of Tribal Nations' deep roots in BENM and their relationship to the landscape, this knowledge would contribute to the responsible stewardship of the fire-prone landscapes. Additionally, hazardous fuels would be proactively reduced around cultural resource sites, including archaeological sites that are susceptible to destruction from prescribed burns or wildfire. In regions of BENM where hazardous fuel reductions are occurring, the agencies would prioritize making fuelwood and forestry products resulting from these treatments readily available to the Tribal Nations and the public. For all alternatives, in collaboration with the BEC, agencies would establish a Fuelwood Working Group; this committee would create a framework for authorizing traditional wood cutting and wood product harvesting in BENM according to Traditional Ecological Knowledge. These techniques and collaboration would also serve to reduce fuel loading in these project areas, would reduce wildfire severity and extent, and would help to maintain and restore healthy VCCs. Furthermore, agencies would collaborate with the BEC to protect culturally modified trees during fuels treatments and fire suppression, as practicable.

Finally, ESR and restoration efforts following wildfires would be implemented to protect cultural resources (see above for methods). These methods are frequently used when unique or critical cultural and/or historical resources are at risk.

Impacts to Health and Human Safety

Where appropriate, wildfire would be managed in a manner that protects objects and other values at risk. The agencies would work with the BEC, other partners, and impacted groups and individuals to reduce risks from wildfires to communities. For instance, hazardous fuels reduction treatments would be used to protect human resources and reduce the threat of wildfire to communities in high-risk areas. Priority areas for hazardous fuels reduction treatments would include WUI areas; RMAs; OHV open and limited areas; and/or ROWs where there is increased ignition potential and where VCCs have significantly departed from historical conditions. Typically, the agencies work collaboratively with communities at risk within the WUI to develop plans for risk reduction. To ensure this, cooperating agreements with other federal, state, local, and private organizations would be maintained and/or developed to implement WUI wildfire risk assessments, and hazardous fuels reduction treatments.

In the event of a wildfire, ESR and restoration efforts following wildfires may be implemented if needed to protect public health and safety, and community infrastructure. These efforts would protect communities from degradation of water quality, increased flooding risk, and increased debris flow risk.

3.5.4.2.3. Impacts under Alternative A

Under Alternative A, current management of fuels would continue under existing LMPs and USDA Forest Service's Spatial Fire Planning contained in the WFDSS. The current conditions, trends, and forecasts for fire and fuels, as summarized in affected environment, would be expected to continue along similar trajectories.

Generally, Alternative A, when compared to all other alternatives, primarily uses federal wildland fire land management decisions when managing wildfire and fuels, with less of an emphasis on Tribal collaboration regarding fire and fuels management. Sections 3.5.3.1 and 3.5.3.2.2 capture the majority of the current wildfire and fuels management strategies and their respective impacts to natural resources, cultural resources, and health and human safety; however, there are notable exceptions, which are discussed below.

Impacts to Ecosystem Function and Fire Regimes

On NFS lands, certain vegetative types (see Table 2-6 in Chapter 2, Section 2.4.7) would be managed such that varying successional stages would be present to provide for a high level of vegetative diversity and productivity relative to conditions described in the 1986 Manti-La Sal RMP, rather than to match the more modern Desired Wildland Fire Condition (see Appendix D). Additionally, chaining—a mechanical fuel removal treatment where chains attached to tractors or other heavy equipment are dragged across the landscape to uproot and remove the vegetation in their path—would be permitted under Alternative A.

Alternative A would use preplanned prescribed fire resulting from planned or unplanned ignitions to accomplish resource management objectives, such as reducing fuel load buildup, improving forest and woodland health, improving range health, and wildlife habitat improvement, among others. Fuels treatments would be allowed in the Dark Canyon Wilderness only if it were determined that it would maintain or enhance wilderness characteristics. The treatments would use “light-on-the-land”

techniques. “Light on the land” would not need to be adhered to for fuels treatments in all other designated wildernesses, WSAs, USDA Forest Service–recommended wilderness, LWC, or any other lands within BENM. Under Alternative A, authorized wood product harvest by Indigenous peoples and other members of the public would be used to support hazardous fuels treatment projects as needed. For LWC, under Alternative A, fire suppression would be through light-on-the-land techniques.

Under Alternative A, during initial attack and fire suppression the use of heavy equipment during fire construction would be restricted in riparian areas unless other values are at risk. More generally, the use of heavy equipment during initial wildfire attack and suppression in aquatic and riparian ecosystems is to be avoided to the extent possible.

Overall, Alternative A provides a suite of options for improving ecosystem function and returning fire regimes to their historic VCC. However, some of the management guidelines are dated and, when compared to the other alternatives, fire management has less of an emphasis on maintaining healthy ecosystems and returning fire regimes to their historical conditions. Fire and fuels management options and guidelines under Alternative A would be least effective for maintaining/improving ecosystem health and restoring fire regimes as compared to all other alternatives.

Impacts to Cultural Resources

Under Alternative A, the agencies would proactively reduce hazardous fuels or mitigate the potential hazard around archaeological and cultural resources sites that are susceptible to destruction by prescribed fire or wildfire. Management response to fire would follow guidelines described in Section 2.3 of each unit’s MMP in the 2020 ROD/MMPs and in current implementation-level fire management planning documents.

Overall, Alternative A provides a suite of options for protecting cultural resources; however, this alternative would permit more fire management strategies that could damage or put at risk cultural resources, as compared to all other alternatives.

Impacts to Health and Human Safety

Under Alternative A, vegetation and fuels treatments would be prioritized in high-value/high-risk areas, such as the WUI, developed recreation facilities (e.g., campgrounds), and regions of BENM with VCC IIIA and IIIB areas.

3.5.4.2.4. Impacts under Alternative B

Generally, regarding fire and fuels management, Alternative B would involve increased environmental protection measures and more Tribal collaboration than Alternative A.

Impacts to Ecosystem Function and Fire Regimes

Regarding fire and fuels impacts to ecosystem function and fire regimes, Alternative B would use the same fire and fuels management guidelines as Alternative A with two additions. One, Alternative B would actively manage wildfire to prioritize the protection of riparian, wetland, and water resources. Two, Alternative B would emphasize the protection of “other” natural resources that were not captured under Alternative A when considering fire and fuels management options.

Rather than following the 1986 Manti-La Sal RMP, as amended, Alternative B would implement vegetation and fuels treatments on BLM-administered and NFS lands that would use all available

tools, including prescribed fire, wildfire, and mechanical methods, in a manner that is consistent with the protection of BENM objects. Emphasis would be on maintaining functional/structural plant groups, productivity of native species, providing healthy vegetation communities and cover types for Indigenous peoples' traditional and ceremonial uses, habitat health, and habitat connectivity (to enhance plant and wildlife resiliency to environmental change). Unlike Alternative A, the BLM and USDA Forest Service would be required to use MIST or light-on-the-land techniques for vegetation and fuels treatments in all designated wilderness areas and WSAs. Additionally, fuels and vegetation management in all designated wilderness, WSAs, USDA Forest Service–recommended wilderness, and LWC (not just the Dark Canyon Wilderness) would be allowed only if they were determined to be consistent with the protection of Monument objects and maintain or enhance long-term wilderness character or characteristics, as applicable. For LWC, similar to Alternative A, fire suppression would also use MIST. In non-wilderness, multiple fire and fuels management techniques would be permitted, including the use of chaining methods (for fuel removal). Furthermore, during any vegetation and fuels treatments the agencies and the BEC would collaborate to identify stewardship contracts or other partnerships to help reduce fuels and to help provide fuelwood to Tribal Nations.

Similar to all alternatives, hazardous fuels reduction treatments would be used to restore ecosystems and protect natural resources; however, fire and fuels treatments used throughout BENM would also prioritize returning vegetation types to their natural fire return intervals, historic vegetation conditions, and landscape characteristics, wherever possible. These treatments would also be consistent with the goals of protecting BENM objects. Unlike Alternative A, vegetation/fuels treatments and non-structural range improvements with the primary purpose of increasing forage for livestock would be prohibited. Under Alternative B, authorized wood product harvest from the Tribes and the public would also be used to support hazardous fuels treatment projects as needed.

Under Alternative B, the use of heavy equipment during fire line construction during initial attack and fire suppression would follow the same guidelines as described for Alternative A; however, the use of heavy equipment would only be permitted when, specifically, life, property, and/or BENM objects are at risk.

Overall, Alternative B provides a suite of options for improving ecosystem function and returning fire regimes to their historic VCC. Generally, fire management under Alternative B places far more of an emphasis on maintaining/improving ecosystem health and restoring fire regimes, through a collaborative framework with the BEC and Tribal Nations, than Alternative A.

Impacts to Cultural Resources

Regarding fire and fuels management impacts to cultural resources, Alternative B would use the same fire and fuels management guidelines as Alternative A, with two additions. Alternative B would emphasize, where practicable, Tribal and public use of wood/biomass generated by vegetation and fuels treatments to help maintain cultural ties to the landscape. Alternative B would also emphasize the protection of “other” cultural resources that were not captured under Alternative A when considering fire and fuels management options.

Similar to Alternative A, wildfire would not be an acceptable management option when certain resources may be impacted and there are no reasonable resource protection measures to protect such resources and values (see Section 3.5.4.2.2 for a list of resources); however, Alternative B would also include resources where wildfire would not be acceptable, such as traditional use sites that might be vulnerable to damage from fire and areas of special cultural significance to Indigenous communities. Additionally, in traditional use areas that might be vulnerable to fire

(which would be identified by the BEC), fire and fuels management would emphasize Traditional Ecological Knowledge and traditional techniques.

Similar to Alternative A, the agencies would proactively reduce hazardous fuels or mitigate the potential hazard around archaeological and cultural resources sites that are susceptible to destruction by prescribed fire or wildfire; however, management response to fire would follow guidelines described in Section 3.5.4, in addition to implementation-level fire management planning documents.

Fire management under Alternative B places far more of an emphasis on protecting cultural resource than Alternative A. Alternative B would also incorporate more collaboration with the BEC and Tribal Nations than Alternative A to help protect cultural resources during fire management activities.

Impacts to Health and Human Safety

Under Alternative B, agencies would collaborate with the BEC to identify areas of high value/high risk and prioritize treatment in those areas. These could include, but are not limited to, areas that provide traditional use plants or animals, areas not meeting desired VCC, or areas that have significant cultural resources. Traditional Indigenous Knowledge would be incorporated in guiding vegetation management and emphasis would be on maintaining desirable future conditions of vegetation cover types for Indigenous peoples' traditional and ceremonial uses and in maintaining desired Ecological Site Descriptions/VCC. When compared to Alternative A, there would be less of an emphasis on treatments in the WUI and recreational sites, which could place communities and the public at greater risk from fire.

3.5.4.2.5. Impacts under Alternative C

Generally, Alternative C would involve more stringent environmental protection during fire and fuels management than Alternative A or B.

Impacts to Ecosystem Function and Fire Regimes

Alternative C would follow the same fire and fuels management guidelines as Alternative B.

Most vegetation management would follow the same approach as Alternative B; however, the use of mechanical chaining to reduce fuels would not be permitted. Under Alternative C, light-on-the-land fuels treatments would also be required in USDA Forest Service–recommended wilderness and LWC in addition to designated wilderness and WSAs. Fuels and vegetation management in designated wilderness, WSAs, USDA Forest Service–recommended wilderness, and LWC would follow the same framework as described for Alternative B. Similar to Alternative B, in non-wilderness, and lands with similar designations, multiple fuel management techniques would be permitted, including the use of mechanical methods; however, chaining would be prohibited throughout BENM.

Hazardous fuels treatments would follow the same approach as described for Alternative B.

The restrictions on the use of heavy equipment during fire line construction would follow the same approach as described for Alternative B.

Generally, fire management options that would impact ecosystem function and fire regimes under Alternative C are similar to Alternative B but are more restrictive where they can be used.

Alternative C would have a similar impact on maintaining/improving ecosystem health and restoring fire regimes as Alternative B.

Impacts to Cultural Resources

Regarding fire and fuels management impacts to cultural resources, Alternative C would use the same fire and fuels management guidelines as Alternative B.

Alternative C would also follow the same guidelines as described in Fuels and Fire Management, in addition to implementation-level fire management planning documents, to proactively reduce hazardous fuels or to mitigate the potential fire hazard around archaeological and cultural resources sites.

Alternative C would have a similar impact to cultural resources as Alternative B.

Impacts to Health and Human Safety

Agencies would prioritize fuel and vegetation treatments to reduce fire risk in areas with motorized access, high visitation, and/or developed recreation facilities. In areas without motorized access, high visitation, and/or developed recreation facilities, management would be prioritized as described under Alternative B. This management approach would balance the protection of natural and cultural resources with the protection of health and human safety when compared to the other alternatives.

3.5.4.2.6. Impacts under Alternative D

Generally, Alternative D would involve more stringent environmental protection and Tribal collaboration during fire and fuels management than Alternative A, B, or C.

Impacts to Ecosystem Function and Fire Regimes

Regarding fire and fuels impacts to ecosystem function and fire regimes, Alternative D would follow the same fire and fuels management guidelines as Alternative C, with one addition: agencies would avoid the construction of fire lines within 50 feet of all riparian, wetland, and water resources unless necessary to protect human life and/or BENM objects.

Most vegetation treatments and management would follow the same approach as Alternative C; however, under Alternative D, light-on-the-land fuels treatments would be used throughout the entire BENM, wherever practicable (not just in wilderness areas or lands with similar designations).

Hazardous fuels treatments would follow the same approach as described for Alternative B; however, treatments would also use traditional indigenous methods, where feasible.

The restrictions on the use of heavy equipment during fire line construction would follow the same approach as described for Alternative B.

Generally, fire management options that would impact ecosystem function and fire regimes under Alternative D are similar to Alternative C but are more restrictive. Alternative D would have a similar impact on maintaining/improving ecosystem health and restoring fire regimes as Alternative B.

Impacts to Cultural Resources

Regarding fire and fuels management impacts to cultural resources, Alternative D would follow the same fire and fuels management guidelines as Alternative B.

Alternative D would also follow the same guidelines as described in Fuels and Fire Management, in addition to implementation-level fire management planning documents, to proactively reduce hazardous fuels or to mitigate the potential fire hazard around archaeological and cultural resources sites.

Alternative D would have a similar impact to cultural resources as Alternative B.

Impacts to Health and Human Safety

Vegetation management would be similar to that described for Alternative B; however, throughout BENM, agencies would prioritize the use of treatments using Traditional Indigenous Knowledge and/or natural processes for vegetation management. Mechanical treatments would be used only when necessary to protect BENM objects. Similar to Alternative B, there would be less of an emphasis on treatments in the WUI and recreational sites, which could place communities and the public at greater risk from fire.

3.5.4.2.7. Impacts under Alternative E

Generally, Alternative E would involve more stringent environmental protection during fire and fuels management than Alternatives A, B, C, and D. Additionally, Alternative E would also involve far greater BEC and Tribal Nations collaboration for all fire and fuels management activities.

Impacts to Ecosystem Function and Fire Regimes

Regarding fire and fuels impacts to ecosystem function and fire regimes, Alternative E would follow the same fire and fuels management guidelines as Alternative D, with the following additions. Fire and fuels management would be used to maintain healthy ecological resources, and fire and fuels management would be conducted in a manner that maintains plant and wildfire habitat, habitat connectivity, and allows for the migration needs of threatened, endangered, or special status species, including culturally important species.

Vegetation and fuels treatments under Alternative E would be similar to Alternative D; however, vegetation treatments throughout BENM would emphasize Traditional Indigenous Knowledge and techniques and/or natural processes for vegetation and fuels management, including consideration of impacts to wildlife species habitat. Mechanical methods for fuels management would be used only when necessary to protect BENM objects. Similar to Alternative C, no chaining would be allowed during mechanical treatments.

Hazardous fuels treatments would follow the same approach as described for Alternative B; however, any authorized wood product harvest from the Tribes and the public to support hazardous fuels treatment projects, would be in collaboration with the BEC.

The restrictions on the use of heavy equipment during fire line construction would follow the same approach as described for Alternative B; however, the use of heavy equipment would only be permitted under absolutely necessary conditions.

Regarding emergency stabilization and rehabilitation, the procedures would follow the same guidelines that are described in Section 3.5.4.2.2; however, only native, non-genetically modified seeds would be used for revegetation/reclamation unless necessary to protect BENM objects.

Generally, fire management options that would impact ecosystem function and fire regimes under Alternative E are similar to Alternative D but are more restrictive. Additionally, fire management under Alternative E would incorporate more collaboration with the BEC and Tribal Nations and more Tribal and Traditional Indigenous Knowledge to help protect ecosystem function and fire regimes than all other alternatives.

Impacts to Cultural Resources

Regarding fire and fuels management impacts to cultural resources, Alternative E would follow the same fire and fuels management guidelines as Alternative D, with one addition: agencies would avoid the construction of fire lines within 50 feet of all cultural resources sites unless necessary to protect human life and/or BENM objects.

Alternative E would also follow the same guidelines as described in Fuels and Fire Management, in addition to implementation-level fire management planning documents, to proactively reduce hazardous fuels or to mitigate the potential fire hazard around archaeological and cultural resources sites. However, hazardous fuels mitigation and fire mitigation would use traditional Tribal methods where feasible.

Generally, fire management options that would impact cultural resources under Alternative E are similar to Alternative D but are more restrictive.

Impacts to Health and Human Safety

Under Alternative E, agencies would coordinate with the BEC and Tribal Nations to identify areas of high value/high risk and prioritize treatment in those areas, and consider the importance of seasonality. These areas could include, but are not limited to, areas that provide traditional use plants or animals, areas not meeting desired VCC, or areas that have significant cultural resources. Traditional Indigenous Knowledge would be prioritized in guiding vegetation management. Agencies, in collaboration with the BEC, would prioritize the use of treatments using traditional indigenous techniques and/or natural processes for vegetation management. Mechanical treatments (excluding chaining) would be used only when necessary to protect BENM objects. Similar to Alternative B, there would be less of an emphasis on treatments in the WUI and recreational sites, which could place communities at greater risk from fire.

3.5.4.2.8. Cumulative Impacts

The BLM-administered, NFS, NPS-administered, and adjacent state, Tribal, county, and privately owned lands surrounding BENM are considered the cumulative impacts analysis area for fire and fuels management. Ongoing and planned fire and fuels management are influencing ecosystem health and fire regimes on regional scale. The time frame for cumulative environmental impacts for future actions is 15 years.

Portions of BENM adjoin other BLM-administered lands, NFS lands, national parks, and national recreation areas, each with its own LMP guiding fire and fuels management in the administrative areas. Fire and fuels management is becoming more broadly consistent across federal land ownerships due to updated plan adherence with current federal law, regulation, and policy (see Appendix J).

RFFAs taken outside BENM include federal and state-funded hazardous fuels reduction, prescribed fire, natural wildland fire use, habitat enhancement, and range improvement projects on USDA Forest Service- and BLM-administered lands. The hazardous fuels reduction, prescribed and natural fire, and habitat enhancement projects generally aim to move vegetation conditions and fuels loading toward historical conditions and restore historical fire regimes. Currently, the Cactus Park Project would utilize machine mastication, lop and pullback methods, and subsequent seeding to treat approximately 3,098 acres for hazardous fuels loading from pinyon and juniper and restore wildlife habitat.

RFFAs taken within BENM include federal fuels reduction and prescribed fire projects. There are numerous planned fire and fuels projects within BENM. The Shay Mesa Retreatment is a BLM project that plans to treat 2,500 acres within previously treated lands in the Shay Mesa vicinity (within the Cedar FMU) in the 2023 fiscal year. Fuels treatments would consist of hand-treating via lop and scatter of pinyon and juniper saplings that are attempting to re-establish within the previously treated area.

The Mormon Pasture Mountain Wildlife Habitat Improvement Project is a USDA Forest Service-led project situated within the Dark Canyon FMU. This project would contribute to previous treatments (described in table 3.89 of the Affected Environment) and would consist of using prescribed fire in ponderosa pine/oak type to increase diversity in vegetation and age class structure and reduce continuity of existing vegetative fuels. The North Elk Ridge Forest Health Project is another USDA Forest Service lease project situated in the Dark Canyon FMU. This project would use prescribed fire in ponderosa pine and aspen-mixed conifer forests. Approximately 7,500 acres of ponderosa pine forest would be treated with understory prescribed fire. Approximately 40% to 80% of 5,200 acres of aspen-mixed conifer forest would be treated with moderate- to high-intensity prescribed fire. The South Elk Ridge Aspen Restoration Project (another USDA Forest Service project also situated in the Dark Canyon FMU) would utilize thinning and prescribed fire treatments in mixed ponderosa pine/aspen to help restore natural conditions. This project is in its early planning stages. Finally, the Maverick Point Project is also a USDA Forest Service project that would utilize commercial timber, ponderosa pine thinning and stand improvement, and prescribed fire to improve forest health. This project is also in its early planning stages and would occur within the Abajo FMU. Together, these RFFAs would improve ecosystem health and restore fire regimes. Additionally, through Tribal collaboration and input (as required to some degree under all alternatives) these actions would have minimal impact on cultural resources.

Proposed fire and fuels management activities under the alternatives would contribute to the cumulative impacts on regional ecosystem function and fire regimes. Together, these management efforts would contribute to landscape restoration and ecological resilience on a larger scale, with a focus on achieving improved ecosystem health and fire regime restoration. Generally, these actions would seek to protect cultural resources, but the degree of protection would vary depending on treatments located within and outside BENM boundaries.

3.5.5. *Environmental Justice and Social and Economic Values*

The following subsections discuss current conditions, trends, and forecasts of socioeconomic and environmental justice values associated with uses of BLM-administered and NFS lands for the socioeconomic and environmental justice analysis areas. The socioeconomic analysis area is San Juan County, Utah, which is the county where BENM is located and where the economic and social impacts will likely be concentrated. The environmental justice analysis area includes the county where BENM is located (San Juan County, Utah) and extends to include the counties that intersect with the five Tribal Nations that surround BENM (Navajo Nation, Ute Mountain Ute Tribe, Ute Indian Tribe, Hopi Tribe, and Zuni Tribe) in order to include populations that rely on the land around and in

BENM for cultural and traditional purposes that might be disproportionately impacted by the BLM's management decisions (Duchesne County and Uintah County in Utah, Apache County, Coconino County, and Navajo County in Arizona, McKinley County and San Juan County in New Mexico, and Montezuma County in Colorado). The environmental justice analysis area is larger than the analysis area for socioeconomic values because of the nonmarket values associated with a sense of place and cultural identification. BENM is an important and unique area for the Tribes in these surrounding counties. The BLM's management decisions regarding certain resources and uses (such as traditional, cultural, and subsistence use) may impact Tribal members more than the general public. The environmental justice analysis area includes a broader area than the socioeconomic analysis area to ensure that any concerns regarding impacts to the surrounding Tribal Nations are captured and analyzed to see whether the impacts are adverse and disproportionate.

3.5.5.1. AFFECTED ENVIRONMENT

3.5.5.1.1. Social and Economic Values

A variety of groups and communities of shared interest use and are affected by management of BLM-administered and NFS lands, including Tribal and cultural resource communities, habitat and resource conservation communities, recreation communities, mineral development and production communities, visual resource communities, and local residents. Communities of shared interest are organizations and groups of individuals who have common interests in the use and management of BLM-administered and NFS public resources; many organizations or groups of individuals fall under multiple types of communities of interest. Different types of communities of interest have distinct sets of attitudes, beliefs, values, opinions, and perceptions about BLM-administered and USDA Forest Service public resources and the effects of various management policies and actions. These views reflect different cultural and economic linkages that people have to BLM-administered and NFS lands.

Tribal and cultural resource communities of interest are Tribes, organizations, and groups of individuals who value BENM for its cultural and spiritual significance. Indigenous peoples, in particular, maintain a deep understanding of BENM due to their unique relationship to the landscape. For these communities, protection of cultural resources, combined with maintaining access to traditional cultural sites, is extremely important. These cultural sites include areas of past occupation and areas where traditional practices, such as plant gathering and wood product harvest, have occurred. The cultural importance of springs, lakes, and rivers is well documented for the Tribal Nations in and around BENM (Sabata 2018), and traditional cultural uses of the landscape continue today. See Section 3.5.1 for more details.

Habitat and resource preservation communities of interest are organizations and groups of individuals who have a number of conservation objectives, but most believe broadly that protecting at-risk species and maintaining habitats and ecosystems for all species is a fundamental value and should be a high priority for public policy (Brown et al. 2015). Most believe in the intrinsic value of wildlife, well-functioning ecosystems, and pristine areas. Some advocate resource conservation for human as well as wildlife needs, pointing to the beauty and solitude values of unspoiled areas in the Planning Area. Additional resource conservation topics that are of interest to these communities include water, air, and soil resources, as well as vegetation and riparian zone management. Persons and organizations concerned with protection of paleontological, cultural, and historic sites also generally fit into this category of resource preservation communities of shared interest.

There are many types of recreational activities in the analysis area. Recreation communities of shared interest are organizations and individuals who seek access to public lands that provide opportunities for recreational use as well as protection of areas with high recreation values so that future generations can enjoy these values. For many recreationists, maintaining recreation values and habitat or ecosystem values go hand-in-hand; these communities believe that healthy ecosystems support positive recreation experiences. For many recreation communities, the preservation of natural soundscapes is also important in order to provide users with adequate opportunities for quiet recreation. For these communities of interest, resource development and new roads might have permanent impacts to recreation values and might be incompatible with the objective of protection of recreational areas (Brown et al. 2015). Recreation communities often believe that the region relies on tourism and recreation as its primary economic driving force. They point out how expenditures by mountain bikers, rafters, hunters, fishermen, OHV riders, and other recreationists help support local businesses, provide local jobs and income, and generate sales taxes and other public revenues. Because many recreational visitors travel from outside of the region to engage in recreational pursuits, these communities maintain that the recreation and tourism industry has proven to be a stable and increasingly an economic engine for the area, and often compare this to local historical experience with and future potential for downturns in commodities-based industries. See Section 3.5.7 for more details.

Mineral development and production communities of shared interest are organizations and groups of individuals who believe mineral development is a vital component of national, state, and local economies—creating jobs, generating income, and contributing tax and royalty payments to all levels of government. Throughout the West, many of these communities also believe mineral development and production are socially important, because they support the social systems of local communities by providing private sector livelihoods and revenues to government. With respect to oil and gas production, these communities believe that domestic development and production are important to national energy security. They believe that many years of compatible development have been achieved in the area, providing significant benefits to the local and regional economy.

Organizations and individuals who identify as being part of visual resource communities of shared interest focus on the scenic qualities of the area. Although they share many of the perspectives of habitat and resource conservation communities and recreation communities, they emphasize the role of visual resources as the fundamental asset underlying both direct recreational use of public lands and general tourism to the region (Brown et al. 2015). They believe that the scenic quality of the landscape in and around the Planning Area is world renowned and that national parks and other federally and state-managed lands are a huge economic draw to southern Utah and the area in and around the Planning Area because of their scenic qualities. Based on this view of visual resources as a unique and valuable asset, these communities emphasize that the visual integrity of the area needs to be maintained. See Section 3.4.12 for more details.

Intertwined with the above communities of shared interest are local residents. Some residents of San Juan County, Utah, seek to preserve the historical agricultural setting of the community and are reluctant to embrace change in the form of increased recreation and tourism. They are concerned about changes in the character of the community, and also are concerned about increased demands on local government services and infrastructure. Others welcome the opportunities that increased recreation and tourism may provide. This could be in the form of increased employment and earnings, including increased business opportunities, such as increased opportunities for BLM- and USDA Forest Service-permitted activities like guiding and outfitting services. Some see increased opportunities for the very sizeable Indigenous population through any or all of the above. Still others see increased fiscal revenues for local governments through tourism-related taxes.

Table 3-94 shows the basic demographic makeup within the socioeconomic analysis area and the state of Utah. San Juan County has a population of approximately 15,295. Within the socioeconomic analysis area, per-capita and median household income are reported as being lower than for the state of Utah. As is true nationally, nonlabor income is a significant portion of total personal income in San Juan County, but a lower share in Utah as a whole, likely due to the state having an overall younger median age and likely a larger share of the population in the workforce (Table 3-95).

Table 3-94. Population Demographics and Household Income, 2020

Geography	Population	Median Age	Per-Capita Income	Median Household Income
Analysis area (San Juan County)	15,295	32.6	\$31,617	\$52,025
Reference area (State of Utah)	3,151,239	31.1	\$54,657	\$77,684

Source: U.S. Department of Commerce (2022a).

Table 3-95. Components of Household Income, 2020

Geography	Labor Earnings	Dividends, Interest and Rent	Age-related Transfer Payments	Hardship-related Payments	Other Transfer Payments
San Juan County	51.20%	15.80%	13.20%	13.60%	6.30%
State of Utah	64.50%	20.20%	7.10%	4.00%	4.20%

Source: U.S. Department of Commerce (2021a).

Poverty rates¹⁸ for different categories of the population vary across the socioeconomic analysis area and the comparison region. Poverty rates are higher in San Juan County than in the state, based on a variety of indicators (Table 3-96). When evaluated by race and ethnicity, poverty rates within the analysis area are similarly complex and varied. No clear patterns emerge when compared with the United States, an indication that economic conditions in the analysis area do not uniformly mirror national trends or statistics. What can be stated is that poverty rates for certain categories within the analysis area are markedly higher than for the State of Utah.

Table 3-96. Percentage of People in Poverty, 2020

Indicator	San Juan County	State of Utah
People in poverty	22.8%	9.1%
People in "deep poverty" (earning less than half of the federal poverty level)	11.1%	4.1%
Families in poverty	18.1%	6.3%
Families with children in poverty	12.6%	4.7%
Single-mother families in poverty	6.1%	2.2%

Source: U.S. Department of Commerce (2021a, 2022a).

Note: People in poverty is not the same as low income as defined in the discussion on environmental justice communities. Low income is defined as 200% of the poverty line.

Table 3-97 shows total employment by industry in 2020 for San Juan County and the state of Utah. Because the county population is small, much of the sector data are estimates to protect smaller

¹⁸ Poverty rate is not the same as the low income rate, as defined in the discussion on environmental justice communities. Low income is defined as 200% of the poverty line.

firms from disclosure requirements. As is the case in most of the nation, service-related jobs dominate compared to jobs in non-service-related sectors. Services-related employment is the largest category in the county, followed by government.

Table 3-97. Jobs by Industry, 2021

Industry	San Juan County	State of Utah
Total number of jobs	6,557	2,229,147
Non-services related	1,497	349,489
Farm	713	20,552
Forestry, fishing, and agricultural services	72	4,358
Mining (including fossil fuels)	267	11,812
Construction	329	156,909
Manufacturing	116	155,858
Services related	3,306*	1,608,824
Utilities	15*	5,036
Wholesale trade	75*	61,996
Retail trade	442	227,274
Transportation and warehousing	77	97,325
Information	23*	46,605
Finance and insurance	205	159,236
Real estate and rental and leasing	158*	131,835
Professional and technical services	158*	177,495
Management of companies	6*	33,989
Administrative and waste services	147	118,472
Educational services	185*	75,217
Health care and social assistance	698*	185,491
Arts, entertainment, and recreation	95*	48,191
Accommodation and food services	674*	135,066
Other services, except public administration	348	105,596
Government	1,667	270,834

Source: U.S. Department of Commerce (2022b).

Note: All employment data are reported by place of work. Columns may not add up to reported totals due to rounding.

* = Estimates for data that were not disclosed.

Local residents are interested not only in which sectors jobs are, but also in relative pay in those sectors. Table 3-98 shows relative average annual pay by sector.

Table 3-98. Average Annual 2021 Labor Earnings by Industry (2022 dollars)

Industry	San Juan County	State of Utah
Non-services related	\$29,057	\$82,405
Farm	-\$3,450*	\$22,741

Industry	San Juan County	State of Utah
Forestry, fishing, and agricultural services	\$12,542	\$27,298
Mining (including fossil fuels)	\$97,034	\$132,298
Construction	\$39,438	\$82,725
Manufacturing	\$53,207	\$87,710
Services related	\$43,403	\$59,303
Utilities	\$286,800	\$361,168
Wholesale trade	\$88,400	\$105,355
Retail trade	\$21,894	\$47,925
Transportation and warehousing	\$103,922	\$59,079
Information	\$495,913	\$124,823
Finance and insurance	\$30,688	\$60,790
Real estate and rental and leasing	\$21,209	\$31,484
Professional and technical services	\$63,854	\$84,963
Management of companies	\$168,333	\$80,050
Administrative and waste services	\$21,694	\$50,811
Educational services	\$31,238	\$42,396
Health care and social assistance	\$51,275	\$64,905
Arts, entertainment, and recreation	\$17,232	\$28,234
Accommodation and food services	\$27,757	\$32,038
Other services, except public admin.	\$50,658	\$57,117
Government	\$63,191	\$80,690

Source: U.S. Department of Commerce (2022a).

Note: - = Data not available

* Annual average labor earnings for the farm industry were negative in 2021, in San Juan County, because proprietors' income was negative and greater than wages and salary disbursements and supplements to wages and salaries. Proprietors' income can be negative when the producer is operating at a loss (in other words the operating costs are greater than gross revenue).

BLM-administered and NFS lands and federal mineral estate managed within the socioeconomic analysis area affect government budgets at local (county, city, town, school district, and special district), state, and federal levels based on revenues from sales taxes, property taxes, payments in lieu of taxes (PILT), mineral royalties, severance taxes, fees, and other funding sources. Likewise, lands and federal mineral estate in the socioeconomic analysis area result in government expenditures for management, law enforcement, and other activities.

The federal government's Office of Natural Resources Revenue (ONRR) collects royalties and rents from leases of federal lands for production of coal, oil, gas, and other minerals. Federal mineral lease payments to the state are a function of royalties received from production on federal lands, as well as lease payments for parcels leased but not in production. Royalties are the major source of federal receipts and can vary broadly based on energy prices and production. For several years after the "Great Recession," mineral receipts declined sharply but have risen in recent years. The sources of these revenues to the federal government, and their inherent uncertainty based on market factors, makes it difficult to forecast payments to counties and other recipients of state mineral lease payments.

The federal government returns 49% of the total collected revenues to the state in which the mineral production occurred. In fiscal year 2021, payments to Utah totaled \$55,144,537 (ONRR 2022). These payments are then distributed by the state by appropriation or statutory formula (Utah Code 59-21-1).

BLM Field Offices and the USDA Forest Service collect fees and other revenue for a variety of other uses of federal lands. These revenue sources include ROW rents, recreation fees, grazing fees, various permit fees, and more. Revenues from sales of land and vegetative and mineral materials, along with ROW rents, mostly go to the federal treasury, whereas recreation fees are generally retained by the local land management agency. Grazing permit fees generate revenue for the U.S. Treasury, of which 12.5% is returned to the local Grazing Board via the state in which the grazing lands are located. This money is then disbursed to local ranchers through the local Grazing Board, using a 40/60 matching-funds formula, for use in range improvements and maintenance projects, per the Taylor Grazing Act, Section 10. The above payments totaled \$76,198 to San Juan County in fiscal year 2019, primarily fees under the Taylor Act (BLM 2021).

In addition to these payments, Utah counties receive monies from the DOI. The DOI compensates county governments for nontaxable federal lands within their borders via PILT. PILT is based on a maximum per-acre payment reduced by the sum of all revenue-sharing payments and is subject to a population cap. Payments to San Juan County from PILT totaled \$1,724,676 in fiscal year 2022 (DOI 2022).

In San Juan County, local revenues from recreation and tourism and land ownership comprise an important portion of total local government revenues. Table 3-99 summarizes the tourism- and minerals-related local government revenues obtained from these sources.

Table 3-99. Local Government Revenues from Tourism- and Landownership-Related Sources, 2020

Revenue Source	San Juan County
Tourism-related revenues*	
Tourism-related sales taxes (primarily restaurant sales taxes)	\$70,812
County transient room tax	\$700,751
Local sales and use tax	\$1,523,872
Land ownership–related revenues	
Property tax	\$11,999,213

Sources: Kem C. Gardner Policy Institute (2022); Utah State Tax Commission (2021).

* Many of these were down significantly from 2019 due to COVID-19 pandemic–related travel decreases.

It is important to note that the sectoral estimates in the tables above are not specific to BLM-administered and NFS resources, or even to public lands generally. The tourism-related revenues are based on all tourism, which includes some activities on private property, as well as activities on state lands and other federal lands, including local national parks and monuments; however, much of the tourism in San Juan County is based on the large and spectacular public lands base. The natural resources–related revenues include those from private property, as well as public resources. Again, public lands and minerals are the basis for much of the activity in these industries in the county.

San Juan County is rich in outdoor recreational resources. These resources are enjoyed by local residents and attract many visitors. Visitation for outdoor recreation—whether passive pursuits like scenic drives or high-energy active sports like rock climbing and OHV riding—supports an active

tourism industry. This industry is an important economic base for the socioeconomic analysis area. See Section 3.5.7 for more details.

Livestock grazing is important to the 26 permittees whose livestock grazing operations use BENM lands. Forage is important to many ranchers in the socioeconomic analysis area. Grazing on this forage puts weight on calves and sustains producing heifers. Forage on federal lands may be the only forage available to some ranchers during parts of the year. In addition to its economic benefits for local ranchers and the local economy, grazing on federal lands has important social and cultural significance. Some ranching families have been using these lands for generations, and these lands help support a ranching culture that is a key part of the social fabric of analysis area communities. Although the economy and culture of ranching have a less prominent role today than in years past, their historic and continuing cultural significance is clear to many in the region. See Section 3.5.9 for more details.

Table 3-100 shows the basic demographic makeup within the socioeconomic analysis area and the state of Utah. From 2010 to 2020, at 7.0%, population growth in San Juan County was lower than that in Utah overall, which experienced an 18.6% growth during the same period. In 2020, San Juan County had a slightly older population (32.6 years median age) than did Utah as a whole, at 31.1 years median age. Both the county and the state show an increasing median age over time, a trend which is national in scope.

Table 3-100. Demographic Trends, 2010–2020

	San Juan County	State of Utah
Population (2020)	15,295	3,151,239
Population percentage change, 2000–2020	7.0%	18.6%
Median age (2020)	32.6	31.1
Median age (2010)	30.0	28.8

Source: U.S. Department of Commerce (2021b).

Table 3-101 shows changes in employment by industry from 2010 to 2020. In the socioeconomic analysis area, most sectors have shown decline, with the exception of modest growth in the following sectors: professional and technical services; forestry, fishing, and agricultural services; finance and insurance; and retail trade.

Table 3-101. Jobs by Industry Trends, 2010–2020

	San Juan County	State of Utah
Total change in jobs	199	458,907
Non-services related	-318	79,900
Farm	-13	918
Forestry, fishing, and agricultural services	32	986
Mining (including fossil fuels)	-221	-3,126
Construction	-87	53,766
Manufacturing	-29	27,356
Services related	-104*	348,250
Utilities	-2*	644

	San Juan County	State of Utah
Wholesale trade	-17*	9,963
Retail trade	5	38,803
Transportation and warehousing	0	35,215
Information	-7*	9,301
Finance and insurance	12	27,054
Real estate and rental and leasing	-28*	20,867
Professional and technical services	48*	62,350
Management of companies	0*	8,941
Administrative and waste services	-75	25,075
Educational services	9*	22,404
Health care and social assistance	-19*	41,396
Arts, entertainment, and recreation	-5	5,544
Accommodation and food services	-15	22,091
Other services, except public administration	-10*	18,602
Government	-31	30,757

Source: U.S. Department of Commerce (2021b).

Note: All employment data are reported by place of work. Columns may not add up to reported totals due to rounding.

* = Estimates for data that were not disclosed.

Population is expected to increase in San Juan County over the next 40 years. By 2065, San Juan County population is projected to increase by 47% (Table 3-102). The county has a notably lower forecasted rate of population growth compared to the state of Utah, which is projected to increase 94% by 2065 (see Table 3-102).

Table 3-102. Population Forecasts, 2015–2065

Geographic Area	2015	2025	2035	2045	2055	2065	Percentage Change (2015–2065)
San Juan County	15,902	17,932	19,330	20,562	21,775	23,316	47%
State of Utah	2,997,404	3,615,036	4,178,317	4,745,057	5,285,767	5,827,810	94%

Source: Perlich et al. (2017).

Table 3-103 shows the forecasted employment for San Juan County and the state of Utah. The percentage increase for both geographic areas from 2015 to 2065 is similar to the percentage increase in population, over the same time period.

Table 3-103. Total Employment Forecasts, 2015–2065

Geographic Area	2015	2025	2035	2045	2055	2065	Percentage Change (2015–2065)
San Juan County	6,386	7,738	8,684	9,447	10,146	10,850	70%
State of Utah	1,863,692	2,373,675	2,728,541	3,056,754	3,368,205	3,658,710	96%

Source: Perlich et al. (2017).

Table 3-104 shows the projected employment by industry for the state of Utah. The industries with the biggest forecasted percentage of growth are construction, professional and technical services, and administrative and waste services. Compared with the historical trends in employment by industry (see Table 3-104), the industries that have seen the largest historical growth for San Juan County (professional and technical services; forestry, fishing, and agricultural services; finance and insurance; and retail trade) also are expected to increase in employment over the next 40 years.

Table 3-104. Total Utah Employment by Industry Forecasts, 2015–2065

Industry	2015	2025	2035	2045	2055	2065	Percentage Change (2015–2065)
Agriculture	5,375	6,139	6,680	7,261	7,878	8,527	58.70%
Mining	10,371	14,594	14,842	13,603	11,955	10,810	4.20%
Utilities	3,915	3,396	2,853	2,746	2,729	2,707	–30.80%
Construction	84,679	139,236	189,393	245,869	313,012	394,184	365.50%
Manufacturing	123,742	138,616	144,029	148,167	152,890	156,397	26.40%
Retail	157,969	179,273	189,685	201,068	211,428	220,018	39.30%
Transportation and warehousing	51,122	65,317	64,180	60,221	53,381	44,673	–12.60%
Wholesale	50,004	61,934	66,637	69,321	71,380	73,100	46.20%
Information	34,443	43,727	52,475	63,234	74,976	85,930	149.50%
Finance and insurance	60,386	74,663	84,591	95,522	105,455	113,366	87.70%
Real estate	18,643	21,591	24,105	26,032	27,040	26,307	41.10%
Professional and technical services	88,018	137,359	181,517	222,857	260,580	292,024	231.80%
Management	20,203	19,539	17,860	16,383	14,673	12,541	–37.90%
Administrative and waste services	85,999	130,583	162,265	191,742	220,526	248,263	188.70%
Education	42,128	61,471	70,392	75,231	80,101	86,199	104.60%
Health	140,163	190,858	232,200	261,278	280,145	289,890	106.80%
Arts, entertainment, and recreation	21,111	30,207	36,676	43,465	50,219	55,756	164.10%
Accommodations and food	112,549	137,441	143,292	147,809	151,409	154,388	37.20%
Other services	38,697	37,176	40,101	41,403	39,984	35,587	–8.00%
State and local government	198,676	233,844	264,700	296,485	328,071	358,892	80.60%
Federal government, civilian	34,958	40,581	43,789	46,583	49,215	51,831	48.30%
Federal government, military	16,166	15,296	15,277	15,320	15,350	15,356	–5.00%
All other employment	464,381	590,834	681,001	765,152	845,806	921,964	98.50%
State total	1,863,692	2,373,675	2,728,541	3,056,754	3,368,205	3,658,710	96.30%

Source: Perlich et al. (2017).

3.5.5.1.1. Environmental Justice

EO 12898 requires each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (59 *Federal Register* 7629, February 16, 1994). A more recent EO—EO 14096, Revitalizing Our Nation’s Commitment to Environmental Justice for All—was enacted on April 21, 2023. This subsequent EO does not rescind EO 12898. BLM continues to implement EO 12898 until further guidance is provided regarding the implementation of the new EO on environmental justice.

An evaluation of environmental justice impacts requires identification of minority and low-income populations (including Indigenous Tribes) within the affected area and evaluation of the potential for the alternatives to have disproportionately high and adverse impacts on such populations.

This section provides the first step in the environmental justice analysis—a screening analysis of the environmental justice analysis area for the planning action to identify the presence and location of any environmental justice populations. Evaluation of potential adverse impacts to these populations is discussed in the sections on impacts under each alternative.

Subsequent to the publication of EO 12898, CEQ, part of the Executive Office of the President, issued guidance for considering environmental justice within the NEPA process (CEQ 1997). This guidance defines minorities as individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. The guidance further defines a minority population as follows: “Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50%, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis” (CEQ 1997). The guidance also makes clear that Indigenous peoples in the affected area should be considered in the environmental justice screening analysis.

The CEQ guidance does not define what constitutes “meaningfully greater.” The BLM recommends using a threshold for “meaningfully greater” as 110% of the minority population in the reference area (BLM 2022a).

The CEQ guidance does not specify how to identify a “low-income population,” but the BLM defines low income as less than 200% of the poverty level, and the BLM identifies low-income populations as being present if the percentage of people in the region with low income is greater than 50% of the area’s total population or is greater than or equal to the percentage of people with low income in the reference area (BLM 2022a). For the purposes of this analysis, the thresholds stated above from CEQ and the BLM are used to identify any low-income, minority, and Indigenous populations in the environmental justice analysis area.

Table 3-105 shows data for potential environmental justice populations in the environmental justice analysis area. The reference group for whether an environmental justice population exists is the state where the county is located (Utah, Arizona, New Mexico, or Colorado). Counties with populations that meet the criteria for further consideration are identified in Table 3-105 in bold text.

Table 3-105. Environmental Justice Screening for Environmental Justice Analysis Area (2021)

Geography	Percentage Low-Income Population	Percentage Minority Population/State Threshold	Percentage Indigenous Population	Meets Criteria for Further Consideration in One or More Category (Y/N)
Counties in Utah				
Duchesne County	33.64%	15.53%	5.48%	Y
San Juan County	44.05%	56.58%	49.83%	Y
Uintah County	36.50%	19.45%	8.42%	Y
State of Utah	24.68%	22.71%/24.98%	1.99%	-
Counties in Arizona				
Apache County	59.34%	82.29%	75.00%	Y
Coconino County	37.43%	46.97%	28.70%	Y
Navajo County	49.88%	58.74%	46.30%	Y
State of Arizona	31.72%	46.58%/51.24%	5.85%	-
Counties in New Mexico				
McKinley County	59.53%	92.03%	80.40%	Y
San Juan County	48.38%	63.44%	41.90%	Y
State of New Mexico	39.07%	63.97%/70.37%	11.33%	-
Counties in Colorado				
Montezuma County	34.86%	28.51%	15.26%	Y
State of Colorado	23.61%	33.22%/36.54%	2.51%	-

Source: U.S. Census Bureau (2021).

Note: **Bold text** indicates populations that meet the criteria for further consideration as environmental justice population for a given criteria.

The percentage of minority populations in San Juan County in Utah (56.58%) is well above the state threshold for Utah (with a minority population of 22.71% and a threshold for environmental justice communities of 24.98%). The percentage of the low-income population in San Juan County (44.05%) is also above the state average (24.68%). Low-income populations in Duchesne County (33.64%) and Uintah County (36.50%) in Utah; Apache County (59.34%), Coconino County (37.43%) and Navajo County (49.88%) in Arizona; McKinley County (59.53%) and San Juan County (48.38%) in New Mexico; and Montezuma County in Colorado (34.86%) all had low-income populations above the respective state averages (24.68%, 31.72%, 39.07%, and 23.61% for Utah, Arizona, New Mexico, and Colorado, respectively). Minority populations in Apache County (82.29%) and Navajo County (58.74%) exceeded the state threshold for Arizona (with a minority population of 46.58% and a threshold of 51.24%). In New Mexico, McKinley County and San Juan County exceeded the threshold for environmental justice communities for minority populations with 92.03% and 63.44% minority populations for McKinley County and San Juan County, respectively. Based on this comparison, all counties in the environmental justice analysis area met the threshold for an environmental justice community (U.S. Census Bureau 2021). Specific Indigenous Tribes in the analysis area include Navajo Nation, White Mesa Ute (or Ute Mountain Ute Tribe), Ute Indian Tribe, San Juan Southern Paiute Tribe, Hopi Tribe, and Zuni Tribe.

Table 3-106 shows the percentage of the population with low income for the environmental justice analysis area over time, as compared to the state. All counties and statewide averages in the analysis area, except for Duchesne County and Uintah County in Utah and San Juan County in New Mexico, show a decrease in low-income percentage from 2015 to 2021. The low-income population

increased by approximately 2.81 percentage points, 8.11 percentage points, and 7.31 percentage points in Duchesne County, Utah, Uintah County, Utah, and San Juan County, New Mexico, respectively.

Table 3-106. Low-Income Population Percentage for Environmental Justice Analysis Area, 2015–2021

Geography	2010	2015	2021
Counties In Utah			
Duchesne County	No data available	30.83%	33.64%
San Juan County	No data available	54.09%	44.05%
Uintah County	No data available	28.39%	36.50%
<i>State of Utah</i>	33.16%	32.03%	24.68%
Counties In Arizona			
Apache County	61.88%	63.38%	59.34%
Coconino County	46.23%	41.99%	37.43%
Navajo County	48.48%	57.70%	49.88%
<i>State of Arizona</i>	38.88%	38.75%	31.72%
Counties In New Mexico			
McKinley County	61.03%	63.64%	59.53%
San Juan County	43.44%	41.08%	48.38%
<i>State of New Mexico</i>	42.66%	43.10%	39.07%
Counties In Colorado			
Montezuma County	No data available	38.29%	34.86%
<i>State of Colorado</i>	30.62%	29.53%	23.61%

Source: U.S. Census Bureau (2010, 2015, 2021).

Minority population percentage for all geographies in the analysis area saw an increasing trend from 2010 to 2020 (Table 3-107). The percentage of the Indigenous population was relatively constant over the 11-year period, with the biggest changes occurring in McKinley County, New Mexico (which increased by 3.48 percentage points) and San Juan County, New Mexico (which decreased by 3.28 percentage points) (Table 3-108).

Table 3-107. Minority Population Percentage for Environmental Justice Analysis Area, 2010–2021

Geography	2010	2015	2021
Counties In Utah			
Duchesne County	12.55%	14.22%	15.53%
San Juan County	55.84%	54.23%	56.58%
Uintah County	16.57%	17.84%	19.45%
<i>State of Utah</i>	18.75%	20.50%	22.71%
Counties In Arizona			
Apache County	80.10%	80.72%	82.29%
Coconino County	44.64%	45.32%	46.97%
Navajo County	56.41%	57.42%	58.74%

Geography	2010	2015	2021
<i>State of Arizona</i>	41.30%	43.50%	46.58%
Counties in New Mexico			
McKinley County	89.40%	90.11%	92.03%
San Juan County	57.44%	58.99%	63.44%
<i>State of New Mexico</i>	58.67%	60.80%	63.97%
Counties in Colorado			
Montezuma County	24.22%	26.46%	28.51%
<i>State of Colorado</i>	29.38%	30.93%	33.22%

Source: U.S. Census Bureau (2010, 2015, 2021).

Table 3-108. Indigenous Population Percentage for Environmental Justice Analysis Area, 2010–2021

Geography	2010	2015	2021
Counties in Utah			
Duchesne County	6.32%	5.66%	5.48%
San Juan County	51.28%	48.21%	49.83%
Uintah County	8.07%	8.36%	8.42%
<i>State of Utah</i>	1.69%	1.74%	1.99%
Counties in Arizona			
Apache County	73.84%	73.80%	75.00%
Coconino County	28.61%	28.28%	28.66%
Navajo County	45.13%	46.00%	46.29%
<i>State of Arizona</i>	5.30%	5.43%	5.85%
Counties in New Mexico			
McKinley County	76.97%	76.87%	80.45%
San Juan County	38.60%	39.19%	41.88%
<i>State of New Mexico</i>	10.61%	10.34%	11.33%
Counties in Colorado			
Montezuma County	13.68%	13.19%	15.26%
<i>State of Colorado</i>	2.04%	2.11%	2.51%

Source: U.S. Census Bureau (2010, 2015, 2021).

It is difficult to project how minority populations and low-income populations will change in the future. From 2020 to 2035, population is expected to increase in Duchesne County (by 33%), San Juan County (26%), Uintah County (by 29%) in Utah, in Coconino County, Arizona (by 11%), and Montezuma County, Colorado (by 9%), as well as all three statewide totals (Table 3-109). By 2035, Apache County and Navajo County (Arizona), and McKinley County and San Juan County (New Mexico) are expected to decrease by 8%, 4%, 2%, and 6%, respectively (see Table 3-109). If the historical trends in minority populations continue, then the increase in population would be met with an increase in minority populations in Duchesne County, San Juan County, and Uintah County in Utah, Coconino County in Arizona, and Montezuma County in Colorado. The projected minority populations in the other counties of the analysis area might increase or decrease depending on the change in magnitude of the total population and minority population.

Table 3-109. Population Forecasts for Environmental Justice Analysis Area, 2020–2035

Geographic Area	2020	2025	2035	Percentage Change (2020–2035)
Counties in Utah				
Duchesne County	19,950	24,277	26,596	33%
San Juan County	15,295	17,932	19,330	26%
Uintah County	35,736	42,077	45,978	29%
<i>State of Utah</i>	<i>3,151,239</i>	<i>3,615,036</i>	<i>4,178,317</i>	<i>33%</i>
Counties in Arizona				
Apache County	71,714	68,145	66,124	–8%
Coconino County	142,254	152,265	157,881	11%
Navajo County	110,271	107,469	105,610	–4%
<i>State of Arizona</i>	<i>7,174,064</i>	<i>7,781,973</i>	<i>8,776,952</i>	<i>22%</i>
Counties in New Mexico				
McKinley County	71,956	71,581	70,651	–2%
San Juan County	125,608	124,102	118,106	–6%
<i>State of New Mexico</i>	<i>2,097,021</i>	<i>2,125,258</i>	<i>2,138,099</i>	<i>2%</i>
Counties in Colorado				
Montezuma County	26,266	26,804	28,551	9%
<i>State of Colorado</i>	<i>5,684,926</i>	<i>6,034,552</i>	<i>6,769,843</i>	<i>19%</i>

Sources: Arizona Commerce Authority (2022); Colorado Information Marketplace (2023); Perlich et al. (2017); University of New Mexico (2022); U.S. Census Bureau (2020).

Table 3-110 shows the forecasted employment for the environmental justice analysis area. Employment is projected to increase in Duchesne County (by 37%), San Juan County (by 36%), Uintah County (by 38%) in Utah from 2015 to 2035, and in Coconino County (by 19%) and Navajo County (by 8%), Arizona, from 2021 to 2031. These changes are all higher than the projected population increase for a similar time period. This might suggest that these areas could see a decrease in low-income population if more people who were unemployed became employed; however, if the increase in employment is largely due to the result of the increase in population, then the change in low-income population might be small.

Table 3-110. Total Employment Forecasts for Environmental Justice Analysis Area, 2015–2035

Geographic Area	2015	2021	2024	2025	2031	2035	Percentage Change (2021–2031)	Percentage Change (2015–2035)
Counties in Utah								
Duchesne County	12,581	–	–	15,695	–	17,285	–	37%
San Juan County	6,386	–	–	7,738	–	8,684	–	36%
Uintah County	19,161	–	–	23,817	–	26,497	–	38%
<i>State of Utah</i>	<i>1,863,692</i>	–	–	<i>2,373,675</i>	–	<i>2,728,541</i>	–	<i>46%</i>
Counties in Arizona								
Apache County	–	18,539	18,576	–	18,366	–	–1%	–

Geographic Area	2015	2021	2024	2025	2031	2035	Percentage Change (2021–2031)	Percentage Change (2015–2035)
Coconino County	—	64,753	69,567	—	76,911	—	19%	—
Navajo County	—	30,150	31,315	—	32,689	—	8%	—
State of Arizona	—	3,155,478	3,332,012	—	3,697,248	—	17%	—

Sources: Arizona Commerce Authority (2022); Perlich et al. (2017).

Note: No data are available for McKinley County and San Juan County in New Mexico and Montezuma County in Colorado.

Environmental justice populations reside within the analysis area, which means that many of the social and economic demographics and characteristics that are discussed in Section 3.5.5.1.1 apply to these populations, as well. For example, individuals within environmental justice populations are involved with the various groups and communities of interests discussed above. Views and beliefs of individuals that are identified as being part of an environmental justice population can vary across groups; however, there are some values and issues that are often more important factors for environmental justice populations, and BLM and USDA Forest Service management decisions that impact these values could disproportionately impact environmental justice populations.

Minority and Tribal environmental justice populations in the analysis area often value BENM for its cultural and spiritual significance. They often value the natural resources for cultural and traditional rituals as well as for subsistence use. See Section 3.5.1 for more details.

Low-income environmental justice populations in the analysis area tend to be more impacted by rising housing costs due to the increase in visitors and people who move to the area, which has put a strain on the housing market. Low-income environmental justice populations are also impacted by BLM and USDA Forest Service management decisions that could affect access to resources such wood products.

3.5.5.2. ENVIRONMENTAL CONSEQUENCES

3.5.5.2.1. Issues

- Would proposed management result in disproportionate or adverse impacts on environmental justice populations?
- How would proposed management impact jobs and income in the socioeconomic analysis area?
- How would proposed management impact the nonmarket benefits individuals receive from BLM-administered and NFS lands and public resources?

3.5.5.2.2. Impacts Common to All Alternatives

Economic Contributions

Under all alternatives, BENM would provide value to the local and regional economy by providing recreational opportunities as well as grazing and ranching allotments. Recreation and livestock grazing and ranching are some of the most important industries for the local economies within the analysis area, so the economic contributions analysis focused on impacts from the BLM and USDA Forest Service’s management decisions on these resource uses. The contribution to the local economies from recreation and livestock grazing is realized through local jobs, wages, and economic output. As the population in the analysis area is expected to continue to increase in the

future, the local jobs, labor income, and economic output that are provided in BENM are increasingly important to the communities.

Since its creation in 2016, BENM has continued to attract visitors and recreators to the county. Even after the size of the Monument was reduced in 2017, recreation continued to increase. From 2015 to 2019, the annual average increase in visitors was approximately 11.9% per year (BLM 2022b).¹⁹ This increase in visitors has bolstered the local economy and led to the growth of key industries in the area, such as retail trade, food services, and professional, scientific, and technical services (Smith et al. 2021). For the purposes of this analysis, under all alternatives, growth in the recreation activities in the Planning Area is expected to continue.²⁰ See Section 3.5.7 for more information.

Under all alternatives, if grazing permittees decide to voluntarily relinquish their permits or lease, the lands under the allotments would be retired from livestock grazing. This suggests that over time, the number of allotments and acres of land available for grazing could decrease if operators voluntarily relinquish their permits. The economic impact from this reduction in acres available for grazing would depend on the timing and number of allotments retired, but due to the voluntary nature of the retiring of permits, the economic impact is not expected to be substantial.

Under all alternatives, timber harvesting is available for noncommercial use in at least parts of BENM; however, because most of the timber harvest is public, noncommercial use, these activities have minimal impact to the local economies.

There is no current or anticipated production in BENM from uranium and vanadium operations, so no economic contributions from minerals would be expected under the alternatives.

Social Conditions

Nonmarket values are the benefits that individuals attribute to experiences of the environment or uses of natural and cultural resources that do not involve market transactions and, therefore, lack prices. There are many types of nonmarket values. Three nonmarket values are considered in the analysis: 1) the benefits to local communities from the amenity values provided by open space and scenic landscapes; 2) the benefits to individuals, such as the value to recreationists and visitors above and beyond the cost that they pay to recreate; and 3) ecosystem service values, which refer to the ways that healthy ecosystems support, enable, or protect human activity.

In examining nonmarket values, economists often distinguish between “use values” and “nonuse values.” A use value refers to the benefits an individual derives from some direct or indirect experience or activity. Direct experiences and activities include interactions with resources such as climbing a spectacular peak, hunting, or viewing wildlife. Indirect experiences do not require interaction with resources, but still refer to use values; they include values from water supply or water quality regulations, carbon storage, or habitat preservation for wildlife that are viewed or hunted elsewhere. In contrast, a nonuse value refers to the utility or psychological benefit some people derive from the existence of some environmental condition that may never be directly

¹⁹ Annual visits to BENM decreased from 2019 to 2020 and 2021 to 2022; however, recreation more than doubled from 2020 to 2021. This recreation data from 2020 to 2022 were excluded, because the data during this period are often considered to be outliers due to recreation and travel restrictions and openings that occurred during and after the 2020 COVID-19 pandemic.

²⁰ It is unclear how long and what kind of impacts will continue from the 2020 COVID-19 pandemic to the recreation and tourism sectors. There could be a decrease in recreation in the short term, but the growth rate is likely to return to the historical average over a longer period.

experienced, such as an unspoiled landscape or the continued presence of an endangered species. Estimating nonuse values for specific resources is difficult and often controversial.

Nonmarket values are important to consider because they help tell the entire socioeconomic story. Nonmarket valuations are intended to supplement market-based estimates of income generated from commodity uses in order to provide a more complete picture of the economic implications of proposed resource management decisions. It is difficult to put a dollar number on those values, but the correct answer is not “zero.” The BLM and USDA Forest Service are increasingly asked to consider these nonmarket values (in effect, to replace that “zero” with a more useful number for planning and analysis purposes). In some cases, these values can be calculated if appropriate information is available. In other cases, this is not possible; however, it may be helpful to discuss these values qualitatively or to provide examples of these values in analogous situations.

Under all alternatives, open space provides many benefits to the surrounding communities, such as increasing quality of life through visual resources, fresh water, and air quality; waste regulation; biodiversity maintenance; soil formation; protection from natural hazards; and opportunities for solitude and spiritual connection to the landscape. These benefits accrue to recreational users as well as resource preservation and visual resources communities of interest. Although the value of these benefits cannot be quantified through market mechanisms, estimates of some of the value can be obtained through measures like recreation consumer surplus. Consumer surplus is defined as the maximum dollar amount, above any actual payments made, that a consumer would be willing to pay to enjoy a good or service. For instance, hikers pay a market price for gasoline used to reach a trail but pay nothing to use the trail. Any amount that a recreationist would be willing to pay to use this otherwise free resource represents the nonmarket consumer surplus value of that resource to that consumer.

A 2016 report summarized the findings of consumer surplus values per person per day by recreational activity from 421 studies (totaling 3,192 different value estimates) covering the United States and Canada from 1958 to 2015 (Rosenberger 2016). Table 3-111 shows estimated average consumer surplus values for recreational use by primary activity in the USDA Forest Service Intermountain Region. These consumer surplus values are above and beyond what visitors pay to recreate in the area (such as lodging expenses, entrance fees, equipment rentals or purchases, etc.). Instead, they capture the additional value that recreators would be willing to pay because of the added nonmarket benefits they receive, such as improved mental and physical health, reduced potential health costs through increased exercise, and increased quality-of-life benefits. The activities with the highest consumer surplus in the Intermountain Region are non-motorized boating, biking, and hiking. Under all alternatives, the nonmarket benefits from these recreational activities would continue to provide value to local and nonlocal visitors. See Section 3.5.7 for more information.

Table 3-111. Estimates of the Average Consumer Surplus of Recreational Benefits for the Intermountain Region, per Person per Primary Activity Day

Primary Activity	Average Consumer Surplus (\$)
Backpacking	42.81
Biking	96.40
Cross-country skiing	66.18
Developed camping	45.27
Downhill skiing	91.88
Fishing	81.18

Primary Activity	Average Consumer Surplus (\$)
Hiking	94.12
Hunting	87.07
Motorized boating	68.03
Nature related	69.79
Non-motorized boating	118.59
OHV use/snowmobiling	60.11
Other recreation	74.66
Picnicking	58.83
Weighted average	77.04

Source: Rosenberger et al. (2017).

Grazing and ranching on BLM-administered and NFS lands are important resources and activities that provide a sense of place and increase the quality of life of those in and around the ranching and farming community. Livestock grazing has impacts on both permittees as well as local community members who don't hold permits but benefit socially and culturally from nearby livestock grazing. Many farmers and ranchers dedicate their entire working lives to the practice. The resources that BENM provides, under all alternatives, often support the livelihoods of these community members and their families. Although grazing and ranching industries can be measured through metrics such as changes in the number of jobs, income levels, and economic output, there are also values to the community that cannot be quantified, such as the value placed on way of life, passing traditions down from generation to generation, and the sense of belonging to a community. See Section 3.5.9 for more information.

Protected open space and natural resources provide nonmarket values to the Tribes that use and have ties to BENM land. These values include benefits through sustaining traditional, cultural, and spiritual land uses, practices, and knowledge that have been passed down for generations, social cohesion of Tribal members, access to subsistence resources, air and water quality, diverse wildlife and vegetation, and visual resources and soundscapes, among others. For Tribal members, natural resources throughout BENM lands, such as water, land, wind, and sound, are just as important to preserve as built cultural resources, such as archaeological sites (see Appendix L). Additionally, subsistence plays an important role in the Tribes' cultural identity, social organization, social cohesion, transmission of cultural values, and community and individual well-being (Seebach and Feinberg 2021). Changes in open spaces and natural resources through activities that increase disturbance would impact nonmarket benefits, especially for the Tribes surrounding BENM, by reducing opportunities for engaging in subsistence activities, increasing social conflicts among user groups, reducing individuals' health due to reductions in air and water quality and limitations in meeting nutritional dietary needs, and disruptions in traditional, cultural, and spiritual practices.

The BLM and USDA Forest Service's management decisions regarding fire and fuels management aim to provide for resilient and resistant landscapes, protecting fire-adapted communities by reducing the fire hazard, especially within WUI areas, and improving safe and effective wildfire response. Under all alternatives, the BLM and USDA Forest Service would continue to provide these nonmarket benefits that would support safety and increase visual scenery, which can increase quality of life throughout the community. See Section 3.5.4 for more information.

The various nonmarket values of BLM-administered and NFS lands do not always align and could even conflict with each other. For example, an increase in the nonmarket benefits associated with recreation or grazing could coincide with a decrease in the nonmarket benefits that the Tribes

receive from protected open space and natural resources. This is because recreation and grazing could result in damage to natural, cultural, or subsistence resources that the Tribes value.

Under all alternatives, BLM-administered lands in BENM provide benefits to the communities of interest through ecological health and ecosystem services, in addition to the nonmarket values discussed above. These benefits from healthy ecosystems include providing basic human needs, such as food, water, shelter, and fuel; maintaining water and air quality through flood regulation and carbon sequestration; and maintaining habitats for wildlife, including nutrient cycling and biodiversity (World Resources Institute 2005). Although these resources and their associated human benefits represent key areas of importance for BENM management, this list is not inclusive of all goods and services provided in BENM. See Section 3.4.3, Section 3.5.7, and Section 3.5.9 for more details.

Environmental Justice

As mentioned above in the Affected Environment section, environmental justice communities were identified in the analysis area; therefore, further analysis was conducted to identify adverse impacts that could disproportionately affect these environmental communities. Under all alternatives, there could be adverse impacts that would affect environmental justice communities. These impacts include impacts on water quality, traditional cultural use of plants, animals, and minerals, travel and transportation, and economic contributions; however, the degree to which these impacts disproportionately affect environmental justice communities often depends on the site-specific activities that cause the impacts, and the mitigation measures that the BLM and USDA Forest Service take can reduce the impacts overall (see below).

Under all alternatives, the BLM and USDA Forest Service management decisions would be developed in collaboration with the BEC to restore and preserve springs to protect water quality for traditional uses. Surface-disturbing activities and vegetation management, under all alternatives, could lead to degradation of water quality in the analysis area (see Section 3.4.3 for more information on impacts on water quality). Livestock grazing and water wells that are required for livestock, under all alternatives, could also impact drinking water sources and water quantity for nearby communities as well as water supply for wildlife that some environmental justice communities rely on for subsistence use; however, the level to which these impacts on water quality could disproportionately affect environmental justice populations depends on the magnitude of the water quality impacts, location of the impacted surface water and groundwater, and whether the impacts would affect public water systems or water used for personal consumption or traditional use. Under all alternatives, proposed mitigation measures would be taken to stabilize soils to prevent runoff, and surface-disturbing actions would be limited to areas that do not pose a threat to public water systems. Therefore, environmental justice populations would likely not be disproportionately impacted by the BLM and USDA Forest Service's management decisions that might impact water quality.

Under all alternatives, the BLM- and USDA Forest Service–authorized activities within BENM have the potential to contribute to emissions or dust, which would adversely affect air quality; these activities include livestock grazing operations, recreation, ROW developments, travel and transportation management, and vegetation management; however, the BLM and USDA Forest Service, in collaboration with the BEC, would take measures to limit the impacts of activities to air quality. The extent to which impacts to air quality from BLM and USDA Forest Service management decisions would disproportionately impact environmental justice communities depends on the location, duration, and intensity of the emissions or dust and depends on the location of the environmental justice communities. See Section 3.4.14 for more detail.

Under all alternatives, the BLM and USDA Forest Service's management decisions could result in impacts on travel and transportation management. Certain designations on BLM-administered and NFS lands can contain restrictions on travel that adversely affect transportation and access including RMAs, special designations such as ACECs and WSAs, and management of LWC. While these impacts affect all communities in the region, including those who use routes for livestock grazing, recreation, and traditional use, environmental justice populations might be disproportionately impacted due to limited methods of mitigating these impacts or the heavier burden on environmental justice populations to alter their commutes because of impacts on travel and transportation. Additionally, there could be disproportionate impacts on environmental justice communities if the BLM and USDA Forest Service's management decisions lead to restricted access to culturally significant resources or areas of interest to certain environmental justice communities, such as Tribal Nations. Under all alternatives, routes could be maintained and improved to meet public health and safety and access needs, which could result in fewer concerns as routes are improved. This would provide benefits to the local communities. These benefits could disproportionately impact environmental justice communities, especially Tribal populations, who value the cultural resources potentially accessed by these routes for traditional and spiritual uses. See Section 3.5.1 and Section 3.5.8 for more information.

Timber harvesting is an important traditional use for Tribal members in BENM. Under all alternatives, commercial harvesting in woodlands would be restricted, and there could be more private use or Tribal wood product harvest allowed. This could benefit environmental justice communities who rely on wood product harvesting for heating sources or other uses. However, more wood use for heating purposes could result in air quality impacts, which would adversely impact the local communities, including environmental justice populations, especially during the winter months due to inversion conditions. Impacts on emissions from burning wood would likely occur in the analysis area, but outside of the Planning Area. Increased timber harvest could also impact culturally significant resources and sites due to disturbance from foot or vehicle traffic. These impacts would be site specific and depend on the location of the wood burning and emissions. See Section 3.4.6 and Section 3.4.14 for more information.

Under all alternatives, livestock grazing would be allowed on certain BENM land. Livestock grazing could result in disproportionate and adverse impacts on environmental justice communities through increased dust and reduced air quality, reduced water quality, conflicts with wildlife that some environmental justice communities rely on for subsistence use, and potential damage to cultural resources due to trampling, among others. The magnitude of these impacts would depend on site-specific conditions and would require a site-specific analysis.

Under all alternatives, the BLM and USDA Forest Service's decisions on fire and fuels management could protect important cultural and Tribal resources by preventing catastrophic wildfires. These management decisions would provide beneficial impacts on the local communities, and could benefit environmental justice populations, due to the importance of these culturally significant resources and areas to Tribal members. Additionally, fire and fuels management decisions that reduce the risk of severe wildfires could protect property and the health and safety of the local communities, including environmental justice populations. See Section 3.5.1 and Section 3.5.4 for more information.

Under all alternatives, there could be impacts on visual and sound resources through BLM- and USDA Forest Service-authorized activities; however, these impacts would depend on site-specific projects, and they may affect all communities regardless of race or ethnic identities or low-income status. They would likely not disproportionately impact environmental justice communities. See Section 3.4.12, Section 3.4.13, and Section 3.4.15 for more information.

Under all alternatives, BENM contributes to the local economy by providing jobs, labor income, and net economic output. This contribution to the economy affects the community as a whole, including environmental justice communities.

Table 3-112 provides a summary of economic, social, and environmental justice impacts by alternative.

Table 3-112. Summary of Economic, Social, and Environmental Justice Impacts by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Economic contributions	<p>Under Alternative A, there would be no change to recreational opportunities from current conditions. The projected number of visitor parties was estimated to be approximately 702,000 parties (an increase of approximately 15.4% from 2022). Under Alternative A, under the weighted-average of visitor types scenario would result in economic contributions of approximately 1,100 employees, \$27.7 million in labor income, and \$92.2 million in economic output.</p> <p>Under Alternative A, there would be no change to the number of allocated allotments, and there would continue to be approximately 42,509 billed AUMs total (42,097 AUMs for cattle allotments and 411 AUMs for horse allotments) on BLM-administered and NFS lands. Under Alternative A, the economic contribution from grazing would result in approximately 55 total jobs, \$1.3 million in labor income, and \$3.4 million in economic output.</p>	<p>Under Alternative B, the BLM and USDA Forest Service's management decisions would support more recreational use by allowing for more development of visitor amenities in backcountry and primitive areas. This could increase visitors to BENM, which could increase or decrease economic contributions from recreation depending on the type of visitors and projected expenditures for the visitors.</p> <p>Under Alternative B, there would be no change in allocated AUMs on BLM-administered lands, so the economic contributions from livestock grazing activities would be the same as under Alternative A.</p>	<p>Under Alternative C, economic contributions from recreation would be similar to Alternative A.</p> <p>Under Alternative C, there would be no change in allocated AUMs on BLM-administered lands, so the economic contributions from livestock grazing activities would be the same as under Alternative A.</p>	<p>Under Alternative D, there would be more restrictions on recreation. The extent to which the restrictions impact economic contributions from recreation depends on the number of visitors, the type of visitors, and the expenditures.</p> <p>Under Alternative D, the estimated billed AUMs would decrease by 4,863 AUMs compared with Alternative A. Under Alternative D, the economic contributions for grazing would likely be approximately \$3 million in economic output, 48 employees, and \$1.1 million in labor income, which would be approximately \$390,000 less in output, approximately 6 fewer jobs and almost \$143,000 less in labor income than under Alternative A, respectively.</p>	<p>Under Alternative E, economic contributions from recreation would be similar to Alternative D.</p> <p>Under Alternative E, the estimated billed AUMs would be the same as Alternative B; therefore, the cultural and social values associated with grazing would be the same as Alternative B.</p>

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Social conditions	<p>Under Alternative A, the nonmarket benefits, ecosystem services, and social conditions would continue as described in the current conditions.</p>	<p>Under Alternative B, the acres managed to protect LWC would increase compared to Alternative A, which could increase the overall value of nonmarket benefits provided through protected open space, compared with Alternative A, especially for those who value habitat and resource preservation.</p> <p>The benefits associated with recreation (such as impacts on mental and physical health) could increase due to the increase in developed facilities and access to remote locations.</p> <p>Under Alternative B, the cultural and social values associated with grazing would be the same as Alternative A.</p>	<p>Under Alternative C, the acres managed to protect LWC would be the same as under Alternative B, which would be an increase compared with Alternative A and could increase the overall value of nonmarket benefits provided through protected open space, especially for those who value habitat and resource preservation.</p> <p>Under Alternative C, the value of BENM for recreationalists and farmers and ranchers and their families would be similar as those under Alternative A and would continue as discussed in the current conditions.</p>	<p>Under Alternative D, the increase in lands managed for their wilderness characteristics could impact the communities of interest that value habitat and resource preservation by providing additional value. The estimated billed AUMs would decrease compared with Alternative A, which would lead to a reduction in the cultural and way-of-life value for local farmers and ranchers and their families.</p> <p>Under Alternative B, communities of interest that value recreation could be impacted, but would likely continue through recreation in other areas of BENM.</p>	<p>Under Alternative E, lands would be managed to protect and restore BENM cultural resources, which could increase the nonmarket value associated with traditional, cultural, and spiritual uses and resources, especially for the Tribes. The acres managed to conserve LWC would be the same as under Alternative D; however, in coordination with the BEC, additional standards for LWC would be developed. These additional standards include limitations on recreation, which could impact communities of interest associated with recreation, but recreation would likely continue through recreation in other areas of BENM. The management decisions could provide value to other communities of interest such as those who value habitat and resource preservation. The estimated billed AUMs would decrease compared with Alternative A, which would lead to a reduction in the cultural and way-of-life value for local farmers and ranchers and their families.</p>

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Environmental justice	<p>Under Alternative A, there would be no change to air quality management from current conditions.</p> <p>Under Alternative A, access for noncommercial harvest is the most restricted across all alternatives, which could result in disproportionate impacts to environmental justice communities, who rely on wood burning for traditional use; however, the reduced burning could result in benefits to the local communities due to decreased emissions and particulate matter, especially during the winter months due to inversion conditions. Impacts on emissions from burning wood would likely occur in the analysis area, but outside of the Planning Area. The reduced harvest, under Alternative A, could also result in benefits to cultural resources due to decreased disturbance from foot or vehicle traffic.</p>	<p>Under Alternative B, there would likely be reductions in emissions and dust from the BLM and USDA Forest Service's management decisions compared with Alternative A, which would impact all surrounding communities, including environmental justice populations.</p> <p>Under Alternative B, public access to harvesting wood products would increase, compared to under Alternative A. This increase in public access, or noncommercial harvesting, could benefit environmental justice populations such as Tribes, by allowing more opportunities for Tribal members to collect wood products; however, this could have adverse impacts on environmental justice communities through increased emissions from wood burning and potential increase in disruption to cultural resources from increased foot and vehicle traffic.</p>	<p>Air quality impacts to environmental justice communities under Alternative C would be similar to Alternative B, but there could be further reductions in air quality impacts than under Alternatives A and B. These impacts would affect all surrounding communities, including environmental justice populations.</p> <p>The impacts to environmental justice populations from management decisions on timber harvest under Alternative C would be the same as under Alternative B.</p>	<p>Under Alternative D, the impacts to environmental justice communities from air quality would be similar to those described under Alternatives B and C.</p> <p>The impacts to environmental justice populations from management decisions on timber harvest under Alternative D would be similar to Alternatives B and C.</p>	<p>Collaboration with the BEC and Tribal Nations and implementing Traditional Indigenous Knowledge is prioritized the most under Alternative E. This integral collaboration could result in the least number of adverse impacts to Tribal Nations and their members, across the other alternatives.</p> <p>Under Alternative E, impacts to air quality would be reduced compared with all alternative.</p> <p>The impacts to environmental justice populations from management decisions on timber harvest under Alternative E would be similar to Alternatives B, C, and D.</p>

3.5.5.2.3. Impacts under Alternative A

Economic Contributions

Economic contributions from resource management decisions on recreation and livestock grazing were calculated using the Impact Analysis for Planning Model (IMPLAN), an input-output model that tracks inter-industry and consumer spending in a local or regional economy; this allows estimation of indirect and induced economic impacts from a one-time direct change to the economy due to increases or decreases in expenditures, employment, or income. Indirect impacts result from the inter-industry transactions (for example, when a recreation outfitter buys supplies from a local grocery store). Induced impacts result from re-spending of household income (for example, when employees of the recreation outfitter buy goods for personal use at a local grocery store). The outputs calculated from IMPLAN include regional economic output, value added, employment, and labor income.

The modeled direct impacts were calculated from estimated recreation expenditures per visitor party and economic value from grazing per billed AUM, for each alternative. These impacts were then multiplied by the projected number of visitor parties and projected billed AUMs to calculate the total direct impacts from the BLM and USDA Forest Service's management in BENM.

Expenditures from recreation-related activities depend on the number of visitor parties that come to BENM, the amount of spending per party for each visit type and type of expense, and the type of each visitor (White 2017, 2022). The type of visitor includes those who go to BENM for a day trip, those who stay overnight in BENM (camping in a designated campsite or dispersed camping), those who stay overnight off BENM (camping or staying in a hotel or other lodging), nonlocal visitors who travel 50 miles or more from home to the destination, and local visitors who travel less than 50 miles to the destination. Table 3-113 shows the spending patterns per party per day based on the visit type and type of expenditures.²¹ A party of visitors staying overnight off BENM tends to spend more on expenses such as hotels or camping fees, restaurants, entry fees, and souvenirs and other expenses than a party of visitors staying overnight in BENM. Local day-trip visitor parties tend to spend less overall than nonlocal day-trip visitor parties, except for groceries and takeout food, which are very similar between the two groups.

In 2017, the Monticello Field Office estimated the percentage of visitors by type who recreated on BLM-administered lands in BENM based on surveys and observations. Table 3-114 shows the percentage of visitors by type in Indian Creek, Cedar Mesa, and the weighted average of the two from the 2017 analysis. On average, approximately 13% of the visitors to BENM were local, visiting for the day, and approximately 24% of visitors were staying overnight off BENM (BLM 2017).

A report looking at the total visitation to the Manti-La Sal National Forest estimated that approximately 29.5% of the visitors were local, in 2021; however, the report did not break out the visitors by day trips, overnight staying off the Manti-La Sal National Forest, or overnight staying on the Manti-La Sal National Forest (USDA Forest Service 2021).

Table 3-115 shows a range of percentages for each visitor type taken from the BLM and USDA Forest Service reports and the resulting number of visitors on BLM-administered and NFS lands, shown separately, calculated from the estimated percentages and the estimated total visitation numbers. The estimated total visitation numbers were calculated by multiplying the latest visitation

²¹ On average, a party size on BLM-administered land is approximately 2.8 visitors (BLM 2017).

numbers for the BLM and USDA Forest Service by the respective average growth rate.²² The number of parties by type was calculated by dividing the number of visits by visit type by approximately 2.8, which is the average party size (BLM 2017; White 2017). The number of parties by visit type and the spending profile per party per day by visit type were used in the modeling of economic contributions under Alternative A to understand the impacts of the BLM and USDA Forest Service’s management decisions regarding recreation on the local economy.

Table 3-113. Spending Profile per Party per Day by Visit Type (2021 dollars)

Type of Expenditure	Nonlocal Day Trip	Local Day Trip	Overnight Staying In BENM (camping)	Overnight Staying Off BENM (camping)	Overnight Staying Off BENM (lodging)
Motel	\$0.00	\$0.00	\$0.00	\$0.00	\$129.50
Camping fees	\$0.00	\$0.00	\$12.67	\$34.14	\$1.33
Restaurants and bars	\$14.22	\$7.26	\$8.73	\$15.52	\$53.86
Groceries and takeout food	\$6.21	\$6.47	\$11.73	\$14.10	\$12.37
Gas and oil	\$18.33	\$10.96	\$17.06	\$35.67	\$27.55
Local transportation	\$3.83	\$1.11	\$4.38	\$4.94	\$15.74
Admission and fees	\$11.08	\$6.03	\$5.73	\$12.01	\$15.56
Souvenirs and other expenses	\$13.28	\$5.58	\$10.61	\$14.66	\$19.16

Source: BLM (2017).

Table 3-114. Percentage of Visitors by Visit Type in Bears Ears National Monument on BLM-Administered Lands, 2017

Visit Type	Indian Creek	Cedar Mesa	Weighted Average for BLM RMAs
Nonlocal day trip	10%	4%	8%
Local day trip	15%	7%	13%
Overnight staying in BENM (camping)	20%	37%	25%
Overnight staying off BENM (camping)	30%	30%	30%
Overnight staying off BENM (lodging)	25%	22%	24%

Source: BLM (2017). See Table 3-126.

²² For BLM, the number of visits was calculated by multiplying the BLM visitation number in 2022 (600,173 annual visits) (see Table 3-126 in Section 3.5.7) by the 5-year average growth rate, from 2015–2019 (11.9%) (BLM 2022b). For the USDA Forest Service, the number of visitors was calculated by escalating the Manti-La Sal National Forest visitation number in 2021 (957,500 annual visits) to 2023 estimated visits using the 10-year historical average growth rate, from 2011 to 2021 (17.2%) (USDA Forest Service 2011, 2023). The BLM recreation visitor data from 2020 to 2022 were excluded, because the data during this period are often considered to be outliers due to recreation and travel restrictions and openings that occurred during and after the 2020 COVID-19 pandemic.

Table 3-115. Range of Percentage of Visitors by Visit Type in Bears Ears National Monument

Visit Type	High Local Day Trips and Low Overnight Off BENM			Weighted Average for BLM RMAs			Low Local Day Trips and High Overnight Off BENM		
	Percent of Total Visitors	Number of Visitors on BLM-Administered Lands	Number of Visitors on NFS Lands	Percent of Total Visitors	Number of Visitors on BLM-Administered Lands	Number of Visitors on NFS Lands	Percent of Total Visitors	Number of Visitors on BLM-Administered Lands	Number of Visitors on NFS Lands
Nonlocal day trip	10%	67,172	131,524	8%	53,738	105,220	5%	33,586	65,762
Local day trip	30%	201,516	394,573	13%	87,324	170,982	10%	67,172	131,524
Overnight staying in BENM (camping)	20%	134,344	263,049	25%	167,930	328,811	25%	167,930	328,811
Overnight staying off BENM (camping)	20%	134,344	263,049	30%	201,516	394,573	25%	167,930	328,811
Overnight staying off BENM (lodging)	20%	134,344	263,049	24%	161,213	315,659	35%	235,102	460,336
Total*	100%	671,720	1,315,245	100%	671,720	1,315,245	100%	671,720	1,315,245

Source: BLM (2017, 2022b); USDA Forest Service (2011, 2023).

* Total number of visitors is calculated by multiplying the BLM visitation number in 2022 by the 5-year average growth rate, from 2015 to 2019 (11.9%; BLM 2022b) and the USDA Forest Service Manti-La Sal National Forest visitation number in 2021 by the 10-year average growth rate, from 2011 to 2021 (17.2%) (USDA Forest Service 2011, 2023).

The economic value of livestock grazing was calculated based on the average value of cattle production per AUM over 10 years (USDA Economic Research Service 2022), and the value of a horse is 1.25 times the value of a cow (Stam et al. 2018). Table 3-116 shows the value of production per cow, AUMs per cow, adjusted value of cow production per AUM, and the estimated value of horse per AUM. The 10-year average value of cow production per AUM (in 2021 dollars) was approximately \$52.69 and the estimated value of horse per AUM was \$65.86.

Table 3-117 shows the total number of permitted AUMs by allotment type, the calculated percentage of permitted AUMs by type, the total billed AUMs, and the calculated percentage of total billed AUMs to total permitted AUMs for BLM-administered and NFS lands.²³ The estimated projected number of billed AUMs by allotment type for each alternative was calculated by multiplying the total allocated AUMs by the percentage of billed AUMs to permitted AUMs (58.588%) and the percentage type of permitted AUMs (99.033% and 0.967% for cattle and horses, respectively; see Table 3-118 for estimated projected number of billed AUMs by alternative).

Table 3-116. Value of Production for Grazing

Year	Value of Production per Cow (nominal \$)	AUMs per Cow	Adjusted Value of Cow Production per AUM (2021 dollars)	Estimated Value of Horse per AUM (2021 dollars)
2012	744.93	16	52.39	65.48
2013	780.50	16	56.46	70.57
2014	1,076.00	16	93.34	116.67
2015	1,015.79	16	81.00	101.25
2016	704.62	16	46.84	58.55
2017	710.20	16	48.46	60.57
2018	589.29	16	38.75	48.44
2019	558.00	16	36.69	45.86
2020	565.77	16	35.06	43.82
2021	606.07	16	37.88	47.35
10-Year Average	735.12	16	52.69	65.86

Source: IMPLAN (2022); USDA, Economic Research Service (2022).

Table 3-117. Number of Permitted and Billed Animal Unit Months by Allotment Type, 2021–2022 Grazing Season

Allotment Type	Permitted AUMs	Billed AUMs	Percentage of Billed AUMs to Permitted AUMs	Percentage Type of Permitted AUMs
Total	59,441	34,825	58.588%	–
Cattle	58,866	–	–	99.033%
Horse	575	–	–	0.967%

Note: – = Data not available.

²³ USDA Forest Service reports billed grazing data in HMs. For the purposes of this analysis, HMs were converted to AUMs by assuming a HM of cattle or horses is equal to one AUM (Godfrey 2008). This methodology most likely overestimates the number of AUMs, because calves, which can be counted as one HM, would be treated as one AUM, although they would not use as much forage as one cow or one horse.

Table 3-118. Number of Allocated Animal Unit Months and Estimated Billed Animal Unit Months by Allotment Type and Alternative

Allotment Type	Allocated AUMs			Estimated Total Billed AUMs*	Estimated Billed AUMs for Cattle†	Estimated Billed AUMs for Horse‡
	BLM	USDA Forest Service§	Total	Total	Total	Total
Alternative A	62,035	10,520	72,555	42,509	42,097	411
Alternative B	62,035	10,520	72,555	42,509	42,097	411
Alternative C	62,035	10,520	72,555	42,509	42,097	411
Alternative D	56,347	7,908	64,255	37,646	37,282	364
Alternative E	58,140	5,754	63,894	37,434	37,072	362

* Calculated by multiplying the percentage of billed AUMs to permitted AUMs for all allotments (58.588%) by the total allocated AUMs for each alternative.
 † Calculated by multiplying the percentage type of permitted AUMs for cattle (99.03%) by the estimated total billed AUMs for each alternative.
 ‡ Calculated by multiplying the percentage type of permitted AUMs for horse (0.97%) by the estimated total billed AUMs for each alternative.
 § USDA Forest Service reports billed grazing data in HMs. For the purposes of this analysis, HMs were converted to AUMs by assuming a HM of cattle or horses is equal to one AUM (Godfrey 2008). This methodology most likely overestimates the number of AUMs, because calves, which can be counted as one HM, would be treated as one AUM, although they would not use as much forage as one cow or one horse.

Under Alternative A, there would be no change to recreational opportunities. There would continue to be approximately 390,000 acres designated as OHV closed and 685,000 acres designated as OHV limited on BLM-administered lands, and there would continue to be approximately 46,000 acres closed to OHV travel and 243,000 acres limited to OHV travel on NFS lands (see Section 3.5.7 for more information on impacts to recreation from the BLM management decisions). Under Alternative A, the BLM would continue to manage the existing 10 SRMAs, two ERMAs, and approximately 113,000 acres of land managed as RMZs. The projected number of visitor parties was estimated to be approximately 702,000 parties (an increase of approximately 15.4% from 2022). Table 3-119, Table 3-120, and Table 3-121 show the economic contributions from BLM and USDA Forest Service management decisions under Alternative A for high local day trips but low overnight off-BENM visits, low local day trips but high overnight off-BENM visits, and the weighted-average visit types, respectively. Under Alternative A, the economic contributions from recreation on BENM could range from almost 1,000 employees, \$23 million in labor income, \$38 million in value added, and \$77 million in economic output to approximately 1,300 employees, \$33 million in labor income, \$55 million in value added, and \$110 million in economic output, under the scenario with high local day trips and low overnight off BENM visits and the scenario with low local day trips and high overnight off BENM visits, respectively (see Table 3-119 and Table 3-120). The scenario with low local day trips and high overnight off BENM results in more total economic contributions due to the higher expenditures from visitors who stay off BENM in hotels and other lodging, and lower expenditures from local visitors who only recreate for the day. Recreation under the weighted-average percentage of visitor types scenario would result in economic contributions of approximately 1,100 employees, \$27.7 million in labor income, \$45.6 million in value added and \$92.2 million in economic output (see Table 3-121).

Table 3-119. Economic Contributions for Recreation under Alternative A for High Local Day Trips and Low Overnight Off Bears Ears National Monument Visits (2023 dollars)

Impact	Employment		Labor Income (\$000)		Value Added (\$000)		Output (\$000)	
	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total
Direct	1.2	842	27.32	19,192	42.90	30,136	85.27	59,898

Impact	Employment		Labor Income (\$000)		Value Added (\$000)		Output (\$000)	
	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total
Indirect	0.1	72	3.71	2,608	6.01	4,224	15.09	10,600
Induced	0.1	42	2.10	1,478	5.32	3,738	9.54	6,704
Total†	1.4	956	33.14	23,277	54.24	38,099	109.91	77,202

Source: IMPLAN (2023).

Note: All dollar values are shown in thousand dollars, so \$33.14 per 1,000 parties shown in the table for labor income would be \$33,140 per 1,000 parties.

* Economic contribution results from IMPLAN modeling are linear, so changes in recreation party estimates could be multiplied by the per-1,000 party multipliers to get the total contributions from the new recreation party number.

† Totals may not exactly equal the sum of the impacts above due to rounding.

Table 3-120. Economic Contributions for Recreation under Alternative A for Low Local Day Trips and High Overnight Off Bears Ears National Monument Visits (2023 dollars)

Impact	Employment		Labor Income (\$000)		Value Added (\$000)		Output (\$000)	
	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total
Direct	1.7	1,168	38.66	27,157	62.18	43,677	121.93	85,650
Indirect	0.1	105	5.40	3,795	8.71	6,118	21.77	15,291
Induced	0.1	60	2.99	2,099	7.56	5,311	13.56	9,523
Total†	1.9	1,333	47.05	33,051	78.45	55,106	157.26	110,464

Source: IMPLAN (2023).

Note: All dollars values are shown in thousand dollars, so \$47.05 per 1,000 parties shown in the table for labor income would be \$47,050 per 1,000 parties.

* Economic contribution results from IMPLAN modeling are linear, so changes in recreation party estimates could be multiplied by the per-1,000 party multipliers to get the total contributions from the new recreation party number.

† Totals may not exactly equal the sum of the impacts above due to rounding.

Table 3-121. Economic Contributions for Recreation under Alternative A for Weighted-Average Percentage of Visitor Types (2023 dollars)

Impact	Employment		Labor Income (\$000)		Value Added (\$000)		Output (\$000)	
	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total	Per 1,000 Parties*	Total
Direct	1.4	1,011	32.53	22,853	51.38	36,091	101.89	71,569
Indirect	0.1	86	4.43	3,115	7.19	5,052	18.02	12,658
Induced	0.1	50	2.50	1,759	6.33	4,449	11.36	7,978
Total†	1.6	1,147	39.47	27,727	64.91	45,592	131.26	92,205

Source: IMPLAN (2023).

Note: All dollars values are shown in thousand dollars, so \$39.47 per 1,000 parties shown in the table for labor income would be \$39,470 per 1,000 parties.

* Economic contribution results from IMPLAN modeling are linear, so changes in recreation party estimates could be multiplied by the per-1,000 party multipliers to get the total contributions from the new recreation party number.

† Totals may not exactly equal the sum of the impacts above due to rounding.

Under Alternative A, there would be no change to the number of allocated allotments, and there would continue to be approximately 42,509 billed AUMs total (42,097 AUMs for cattle allotments and 411 AUMs for horse allotments) on BLM-administered and NFS lands (see Table 3-118). Under Alternative A, the economic contribution from grazing would result in approximately 55 total jobs,

\$1.3 million in labor income, \$1.2 million in value added, and \$3.4 million in economic output (Table 3-122).

It should be noted that economic contributions of grazing do not constitute a measure of economic values, but rather demonstrate the role of grazing activity in the local economy. The economic values of various land uses and activities include both market and nonmarket values, neither of which are directly measured by economic contributions.

Table 3-122. Economic Contributions for Grazing under Alternative A (2023 dollars)

Impact	Employment		Labor Income (\$)		Value Added (\$)		Output (\$)	
	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total
Direct	1.0	43	21,695	922,212	19,568	831,820	53,724	2,283,732
Indirect	0.2	9	5,490	233,383	2,347	99,752	16,108	684,714
Induced	0.1	3	2,221	94,412	5,639	239,712	10,097	429,194
Total†	1.3	55	29,406	1,250,007	27,554	1,171,284	79,928	3,397,640

Source: IMPLAN (2023).

* Economic contribution results from IMPLAN modeling are linear, so changes in estimated AUMs could be multiplied by the per-1,000 AUM multipliers to get the total contributions from the new grazing number.

† Totals may not exactly equal the sum of the impacts above due to rounding.

Social Conditions

Under Alternative A, the nonmarket benefits and ecosystem services provided by the BLM and USDA Forest Service's management decisions in the analysis area would continue. Under Alternative A, there would continue to be 48,954 acres of non-WSA LWC managed for their wilderness characteristics. These acres represent approximately 11% of the total lands in BENM that have been inventoried as having wilderness characteristics. The benefits associated with the ecosystem services provided on protected open space would not be as big, due to the lack of protection for a large portion of the LWC. This means there could continue to be adverse impacts on the benefits and values associated with protected open space, such as nonuse and existence values and quality-of-life impacts through visual and sound resources. The benefits associated with recreation (such as impacts on mental and physical health), grazing (such as way-of-life benefits), and fire and fuels management would continue under Alternative A.

The social conditions, trends, and forecasts that were discussed in Section 3.5.5.1 would continue under Alternative A. The communities of interest that value habitat and resource preservation, would continue to gain value from the protected lands managed for their wilderness characteristics in BENM; although, many of those in the habitat and resource preservation communities would continue to urge the BLM and the USDA Forest Service to consider more preservation efforts. Farming and livestock grazing would continue to be an important cultural and economic lifestyle for many of the local residents in the analysis area. Recreation communities of interest could continue to get value from the BLM through recreational access and opportunities on BLM-administered and NFS lands.

Environmental Justice

Under Alternative A, the agencies would continue to manage air quality and resources that impact air quality under current management directions of the 2020 ROD/MMPs, the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP, as amended.

Under Alternative A, there would continue to be land open to noncommercial and commercial harvest of wood products; however, access for noncommercial harvest is the most restricted due to the small number of acres available for harvest under Alternative A compared to the other alternatives. The restricted noncommercial harvest could result in disproportionate impacts to environmental justice communities, who rely on wood burning for traditional use. Specifically, firewood users would be required to pay higher prices for alternative fuels or for fuelwood procured from more distant sources. Additionally, some users may go without heat more frequently, resulting in higher social health costs; however, the reduced burning could result in benefits to the local communities due to decreased emissions and particulate matter, especially during the winter months due to inversion conditions. Impacts to emissions from burning wood would likely occur in the analysis area, but outside of the Planning Area. See Section 3.4.14 for more information on air quality impacts from wood burning. The reduced harvest, under Alternative A, could also result in benefits to cultural resources due to decreased disturbance from foot or vehicle traffic.

3.5.5.2.4. Impacts under Alternative B

Economic Contributions

Under Alternative B, the BLM and USDA Forest Service’s management decisions would support more recreational use by allowing for more development of visitor amenities in backcountry and primitive areas. This could increase visitors to BENM, especially those who enjoy dispersed camping and recreating in more remote areas. Under Alternative B, there could be an increase in percentage of visitors who stay overnight on BENM (so that they are able to access the more primitive areas), rather than visitors who stay off of BENM. As highlighted in Table 3-119 and Table 3-120, a decrease in the percentage of visitors who stay off-site could result in an overall decrease in recreation-related expenditures, which could result in a reduction in economic contributions. On the other hand, if, under Alternative B, there is an overall increase in the number of total visitors to BENM, then there might be an increase in expenditures and economic contributions. The extent to which this change in recreation visitors and type of visitors would impact overall economic contributions would depend on the number of projected visitors and the change in percentage of visitor segments. See Section 3.5.7 for more information on the impacts to recreation from BLM management decisions.

Under Alternative B, the area in BENM unavailable/not suitable for livestock grazing would increase by approximately 28,000 acres, compared to Alternative A; however, there would be no change in allocated AUMs on BLM-administered lands, and the estimated billed AUMs would continue to be approximately 42,509 AUMs total (approximately 42,097 AUMs for cattle allotments and 411 AUMs for horse allotments), which is the same as under Alternative A (see Table 3-118). As a result, the economic contribution from grazing, under Alternative B, would continue to support approximately 55 total jobs, \$1.3 million in labor income, \$1.2 million in value added, and \$3.4 million in economic output (Table 3-123).

Table 3-123. Economic Contributions for Grazing under Alternative B (2023 dollars)

Impact	Employment		Labor Income (\$)		Value Added (\$)		Output (\$)	
	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total
Direct	1.0	43	21,695	922,212	19,568	831,820	53,724	2,283,732
Indirect	0.2	9	5,490	233,383	2,347	99,752	16,108	684,714
Induced	0.1	3	2,221	94,412	5,639	239,712	10,097	429,194

Impact	Employment		Labor Income (\$)		Value Added (\$)		Output (\$)	
	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total
Total†	1.3	55	29,406	1,250,007	27,554	1,171,284	79,928	3,397,640

Source: IMPLAN (2023).

* Economic contribution results from IMPLAN modeling are linear, so changes in estimated AUMs could be multiplied by the per-1,000 AUM multipliers to get the total contributions from the new grazing number.

† Totals may not exactly equal the sum of the impacts above due to rounding.

Social Conditions

Under Alternative B, the acres managed to protect LWC would increase by approximately 48,000 compared to Alternative A. This could increase the overall value of nonmarket benefits provided through protected open space, compared with Alternative A. The benefits associated with recreation (such as impacts to mental and physical health), grazing (such as way-of-life benefits), and fire and fuels management would continue under Alternative B.

Under Alternative B, the increase in lands managed for their wilderness characteristics could impact the communities of interest that value habitat and resource preservation by providing additional value. The estimated billed AUMs would remain the same as under Alternative A, so there would be no impact on the local farmers and ranchers and their families who value livestock grazing for the culture and way of life. Under Alternative B, communities of interest that value recreation could be impacted through more value in more developed facilities and increasing the ease of access to remote locations.

Environmental Justice

Under Alternative B, the BLM and USDA Forest Service would work in collaboration with the BEC, Tribal Nations, local and county government, and surrounding communities to manage activities in a way that would reduce impacts to air quality. The BLM and USDA Forest Service's management decisions would include removing grazing allotments on a voluntary basis, limiting and closing more areas to OHV travel, and prescribed fire and vegetation management that aim to return the forests and public land to historical conditions. Prescribed fire management decisions might increase emissions and dust in the short term, but in the long term, the decisions would likely reduce the severity of future wildfire, which would reduce the risk of higher emissions and degraded air quality for the surrounding communities, including the local environmental justice communities.

Under Alternative B, commercial harvesting would be more restricted and public access to harvesting wood products would increase compared to under Alternative A. This increase in public access, or noncommercial harvesting, could benefit environmental justice populations such as Tribes, by allowing more opportunities for Tribal members to collect wood products; however, this could have adverse impacts to environmental justice communities through increased emissions from wood burning and potential increase in disruption to cultural resources from increased foot and vehicle traffic.

3.5.5.2.5. Impacts under Alternative C

Economic Contributions

The BLM and USDA Forest Service's management decisions regarding recreation under Alternative C would focus on improvements and maintenance to facilities and amenities in high use areas.

Remote areas would still be accessed by experienced recreators, similar to current conditions, so impacts from recreation to economic contributions under Alternative C would be similar to Alternative A. See Section 3.5.7 for more information on the impacts to recreation from BLM management decisions.

Under Alternative C, the area in BENM unavailable/not suitable for livestock grazing would be the same as Alternative B; therefore, economic contribution from grazing would be the same as Alternative B.

Social Conditions

Under Alternative C, the acres managed to protect LWC would be the same as under Alternative B; however, these lands would be managed as OHV closed, rather than OHV limited. Similar to Alternative B, this change in protected lands could increase the value of nonmarket benefits provided through protected open space, compared with Alternative A. There could be an impact to the nonmarket values associated with OHV recreation; however, there would still be OHV limited lands within BENM (approximately 588,000 acres and 112,000 acres on BLM-administered and NFS lands, respectively), so the impacts on nonmarket benefits of recreation, including OHV travel, would likely be minimal.

The communities of interest that value habitat and resource preservation would gain additional value from the increase in lands managed for their wilderness characteristics in BENM, similar to under Alternative B. Under Alternative C, the value of BENM for recreationalists and farmers and ranchers and their families would be similar as those under Alternative A and would continue as discussed in the current conditions.

Environmental Justice

Air quality impacts to environmental justice communities under Alternative C would be similar to Alternative B—there would likely be reductions in emissions and dust from the BLM and USDA Forest Service’s management decisions; however, Alternative C could result in further reductions in air quality impacts due to more acres closed to OHV travel and more restrictions on when certain surface disturbances (such as new water developments and range improvements) are allowed to occur than under Alternatives A and B. These impacts would affect all surrounding communities, including environmental justice populations.

The impacts to timber harvest from management decisions under Alternative C would be the same as under Alternative B. Public access and noncommercial harvesting of wood products would increase, which could benefit environmental justice populations by allowing more opportunities for Tribal members to collect wood products; however, the increased emissions from wood burning could have adverse impacts to environmental justice communities.

3.5.5.2.6. Impacts under Alternative D

Economic Contributions

Under Alternative D, there would be more restrictions on recreation. Approximately 547,000 more acres of BLM-administered and NFS lands would be closed to OHV travel than under Alternative A. Dispersed camping would also be restricted in these areas closed to OHV travel, which could have a large impact to recreators, especially those who visit overnight and stay on BENM. Due to the changes in restrictions, under Alternative D more recreators might choose to recreate in the frontcountry, which could lead to crowding; they might choose to stay overnight off-site; or they might choose to recreate in another location entirely, which could lead to a reduction in visitors to

BENM. As highlighted in Table 3-119 and Table 3-120, if there is an increase in the percentage of visitors who stay off-site, under Alternative D there could be an increase in recreation-related expenditures, which could result in an increase in economic contributions; however, if there are fewer total visitors to BENM under Alternative D compared with Alternative A, due to conflicts from crowding or the lack of recreational opportunities on BENM leading visitors to recreate elsewhere, then there might be fewer expenditures and economic contributions from the BLM and USDA Forest Service's management decisions than under Alternative A. The extent to which this change in the number of recreation visitors and type of visitor would impact overall economic contributions would depend on the number of projected visitors and the change in percentage of visitor segments. See Section 3.5.7 for more information on the impacts to recreation from BLM management decisions.

Under Alternative D, the area in BENM unavailable/not suitable for livestock grazing would increase by approximately 224,000 acres, compared to Alternative A; additionally, the allocated AUMs in the Planning Area would decrease by 8,300 AUMs on BLM-administered and NFS lands. The decrease in available AUMs would likely lead to a reduction in the estimated billed AUMs to 37,646 AUMs (4,863 AUMs less than under Alternative A). This reduction in AUMs could result in a decrease in economic contributions from grazing under Alternative D, compared with Alternative A. Under Alternative D, the economic output for grazing would likely be approximately \$3 million, which would be approximately \$390,000 less in output than under Alternative A. Under Alternative D, the number of employees and labor income attributed to the BLM and USDA Forest Service's management decisions for grazing would be approximately 48 employees and \$1.1 million, respectively, which is approximately six jobs fewer and almost \$143,000 less in labor income than under Alternative A (Table 3-124).

Table 3-124. Economic Contributions for Grazing under Alternative D (2023 dollars)

Impact	Employment		Labor Income (\$)		Value Added (\$)		Output (\$)	
	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total
Direct	1.0	38	21,695	816,714	19,568	736,663	53,724	2,022,482
Indirect	0.2	8	5,490	206,685	2,347	88,341	16,108	606,386
Induced	0.1	2	2,221	83,612	5,639	212,290	10,097	380,096
Total†	1.3	48	29,406	1,107,011	27,554	1,037,294	79,928	3,008,963

Source: IMPLAN (2023).

* Economic contribution results from IMPLAN modeling are linear, so changes in estimated AUMs could be multiplied by the per-1,000 AUM multipliers to get the total contributions from the new grazing number.

† Totals may not exactly equal the sum of the impacts above due to rounding.

Social Conditions

Under Alternative D, all lands that have been inventoried as having wilderness characteristics would be managed to protect these wilderness characteristics. This would result in an increase in acres managed to protect LWC by approximately 370,000, compared with under Alternative A. The management prescriptions would be the same as Alternative C, which means these lands would be closed to OHV travel. Therefore, the benefits associated with protected open spaces would be greater under Alternative D than under Alternative A. There could be an impact to the nonmarket values associated with OHV recreation; areas closed to OHV travel would increase by approximately 416,000 acres and 131,000 acres on BLM-administered and NFS lands, respectively, compared to Alternative A. Recreators would likely use other areas in BENM for OHV travel, which could lead to

congestion in more popular areas; however, many of the nonmarket and ecosystem services from recreation would likely continue, such as support for mental and physical health and opportunities for family and multigenerational connection.

Under Alternative D, the increase in lands managed for their wilderness characteristics could impact the communities of interest that value habitat and resource preservation by providing additional value. The estimated billed AUMs would decrease compared with Alternative A, which would lead to a reduction in the cultural and way-of-life value for local farmers and ranchers and their families. Under Alternative D, communities of interest that value recreation could be impacted, but would likely continue through recreation in other areas of BENM.

Environmental Justice

Under Alternative D, the impacts to environmental justice communities from air quality would be similar to those described under Alternatives B and C. Under Alternative D there would likely be fewer adverse impacts to environmental justice communities from air quality, compared to Alternative A, due to management decisions on acres closed to OHV travel, prescribed fire and vegetation management, and management of surface-disturbing activities such as grazing and water developments.

Under Alternative D, areas closed to OHV use would increase by approximately 547,000 acres, compared with Alternative A. Alternative D would provide increased benefits for access to cultural products and resources due to travel management decisions, compared with Alternative A.

Similar to under Alternatives B and C, public access and noncommercial harvesting of wood products would increase under Alternative D, relative to Alternative A, which could benefit environmental justice populations by allowing more opportunities for Tribal members to collect wood products; however, the increased emissions from wood burning could have adverse impacts to environmental justice communities.

3.5.5.2.7. Impacts under Alternative E

Economic Contributions

Under Alternative E, BLM and USDA Forest Service management decisions would be focused on coordinating uses and management techniques with the BEC. Under Alternative E, recreation management, should steward the cultural landscape of BENM by emphasizing teaching visitors to visit in culturally appropriate ways. Therefore, under Alternative E, similar to Alternative D, there would be more restrictions on recreation than under Alternative A. Under Alternative E, there would be an increase in the acres closed to OHV travel of approximately 134,000 acres, compared with Alternative A. Similarly, under Alternative E, there would be more restrictions on dispersed camping, compared with Alternative A. These restrictions could lead to a smaller number of visitors to BENM under Alternative E compared with Alternative A, a change in locations where visitors recreate compared with Alternative A (which might lead to crowding and user conflicts), or a change in the type of visitor compared with Alternative A. As highlighted in Table 3-119 and Table 3-120, an increase in the percentage of visitors who stay off-site, under Alternative E, could result in an overall increase in recreation-related expenditures and more economic contributions through more supported jobs, labor income, and economic output, compared with Alternative A. On the other hand, if there is a smaller number of total visitors to BENM, compared with Alternative A, then there might be fewer expenditures and economic contributions under Alternative E. The magnitude of the total change in economic contributions would depend on the amount of change in overall visitation and the change in type of visitors. See Section 3.5.7 for more information on

the impacts to recreation from BLM management decisions. Under Alternative E, the area in BENM unavailable for livestock grazing would increase by approximately 28,000 acres, compared to Alternative A; however, there would be no change in allocated AUMs on BLM-administered lands, and the estimated billed AUMs would continue to be approximately 42,509 AUMs total, which is the same as Alternatives A, B, and C. As a result, the economic contribution from grazing would be the same as Alternatives A, B, and C, and grazing under Alternative E would continue to support approximately 55 total jobs, \$1.3 million in labor income, \$1.2 million in value added, and \$3.4 million in economic output (Table 3-125. Economic Contributions for Grazing under Alternative E on BLM-Administered Lands (2023 dollars)).

Table 3-125. Economic Contributions for Grazing under Alternative E on BLM-Administered Lands (2023 dollars)

Impact	Employment		Labor Income (\$)		Value Added (\$)		Output (\$)	
	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total	Per 1,000 AUMs*	Total
Direct	1.0	43	21,695	922,212	19,568	831,820	53,724	2,283,732
Indirect	0.2	9	5,490	233,383	2,347	99,752	16,108	684,714
Induced	0.1	3	2,221	94,412	5,639	239,712	10,097	429,194
Total†	1.3	55	29,406	1,250,007	27,554	1,171,284	79,928	3,397,640

Source: IMPLAN (2023).

* Economic contribution results from IMPLAN modeling are linear, so changes in estimated AUMs could be multiplied by the per 1,000 AUM multipliers to get the total contributions from the new grazing number.

† Totals may not exactly equal the sum of the impacts above due to rounding.

Social Conditions

Under Alternative E, lands would be managed to protect and restore BENM cultural resources, which could increase the nonmarket value associated with traditional, cultural, and spiritual uses and resources, especially for the Tribes. The acres managed to conserve LWC would be the same as under Alternative D; however, in coordination with the BEC, additional standards for LWC would be developed to protect the natural and cultural resources throughout BENM lands and ensure that management standards are guided by traditional knowledge and expertise from Tribes. These additional standards include limitations on recreation, noncommercial harvest, and vegetation management. This change in protected lands could increase the value of nonmarket benefits provided through protected open space, compared with Alternative A. The nonmarket values associated with recreation could be affected due to the limitations in recreational use on LWC. Visitors would likely recreate in other areas of BENM, which could lead to congestion in more popular areas, especially because the number of visitors is expected to increase over time; however, many of the nonmarket and ecosystem services from recreation would likely continue, such as support for mental and physical health and opportunities for family and multigenerational connection.

Under Alternative E, coordination with the BEC and management decisions that focus on projecting cultural resources would provide increased value to Tribes compared with Alternative A. These management decisions could also provide value to other communities of interest such as those who value habitat and resource preservation. The estimated billed AUMs would decrease compared with Alternative A, which would lead to a reduction in the cultural and way-of-life value for local farmers and ranchers and their families. Under Alternative E, communities of interest that value recreation could be impacted, but would likely continue through recreation in other areas of BENM.

Environmental Justice

Collaboration with the BEC and Tribal Nations and implementing Traditional Indigenous Knowledge is prioritized the most under Alternative E. This integral collaboration could result in the least number of adverse impacts to Tribal Nations and their members across all alternatives.

Under Alternative E, impacts to air quality would be reduced due to the emphasis on collaborating with the BEC and Tribal Nations and the use of Traditional Indigenous Knowledge and techniques in addition to Best Available Control Technology, emission controls, and site-specific mitigation measures. These tools would enable the BLM and USDA Forest Service to manage air quality and resources in a way that would minimize impacts to environmental justice populations and Tribal Nations by only allowing mechanical treatments when necessary, limiting prescribed burns to occur during times when they would not impact traditional and cultural uses, and limiting commercial timber harvest. Under Alternative E, air quality impacts from OHV travel would be similar to those discussed under Alternative D.

NFS lands closed to OHV travel under Alternative E would be the same as under Alternative D, whereas approximately 3,000 more acres of BLM-administered areas would be closed to OHV travel. BLM and USDA Forest Service management decisions for travel and transportation under Alternative E would support the protection and restoration of BENM cultural objects, subsistence activities such as hunting on Elk Ridge, and Tribal access for traditional and cultural uses and resources. These management decisions would likely impact environmental justice populations, especially Tribal populations.

Under Alternative E, private wood product harvest would be allowed in designated wood product harvest areas through an authorization system. The wood product harvest areas would be designated, in collaboration with the BEC, as areas where cultural resources could be avoided, and where harvest could protect and restore vegetation, wildlife, and ecosystems or where removal of pinyon and juniper is necessary. Relative to Alternative A, the increased limitations on private wood product harvest could disproportionately impact environmental justice populations, especially those who rely on wood as a heating source. Specifically, firewood users would be required to pay higher prices for alternative fuels or for fuelwood procured from more distant sources. Additionally, some users may go without heat more frequently, resulting in higher social health costs; however, health benefits to local communities could accrue through increased air quality from the reduction in emissions from wood burning. Impacts to emissions from burning wood would likely occur in the analysis area, but outside of the Planning Area.

3.5.5.2.8. Cumulative Impacts

Economic Contributions

Past, present, and reasonably foreseeable projects and activities in the Planning Area and the surrounding communities could contribute to cumulative impacts to the regional economy, as discussed below. See Appendix J for the full list of cumulative actions.

Past, present, and reasonably foreseeable recreation projects that improve or add hiking and mountain biking trails, dispersed camping sites, and site facilities would increase the number of visitors to recreational sites in and around BENM, which would contribute to cumulative impacts to economic contributions associated with recreation in BENM. House of Fire Trailhead project, North Cottonwood toilet construction and installation project, and Hamburger Rock Campground improvements and expansion project would improve parking areas and campground facilities. Bluff River Trail project, Salt Creek Trail reconstruction project, and Goosenecks Campground and trails

project would construct new trails or improve existing trails. SUP projects would contribute to cumulative economic contributions through increased participation in recreation events and outfitter guide services.

The 2022 BEITC LMP proposes programs, such as the Traditional Knowledge Institute, that could lead to cumulative impacts to economic contributions such as increases in jobs, labor income, and economic output. These programs would employ Tribal members from surrounding regions, which could increase population in the area (see Appendix L).

Range and livestock improvement projects would contribute to cumulative economic impacts to the surrounding communities through increasing economic activities associated with grazing. These projects include Indian Creek Allotment range improvement, East League livestock water wells, Flats water wells and Kane Gulch fence, Beef Basin and Dark Canyon Plateau range improvements, Slickhorn allotment water wells, Red House Cliffs water wells, and Lockhart allotment range improvements. These projects focus on maintaining and developing new and existing fences for livestock control and water wells that provide reliable water for livestock. These projects would improve management on grazing allotments in the long term, especially during times of drought. Projects such as water developments, recreation infrastructure construction and maintenance, and restoration projects might result in surface disturbance, which could lead to cumulative impacts through decreased economic activities associated with livestock grazing; however, these impacts would be short term and the surface acres that would be disturbed would be small.

Social Conditions

Past, present, and reasonably foreseeable projects and activities could contribute to the cumulative impacts to the communities surrounding BENM. In particular, the vegetation management projects could contribute to the nonmarket benefits from fire and fuels management decisions within BENM. Actions that contribute to clean water and air could provide additional value to communities of shared interest who value habitat and resource preservation. Projects that protect areas for hunting and subsistence gathering and educate future generations on traditional and cultural uses and values could lead to cumulative impacts to nonmarket benefits and social values, especially to the Tribes (see Appendix L). Projects that improve water wells for grazing could provide value to local residents and those in communities of shared interest associated with farming and ranching. Additionally, the projects associated with recreation that improve or add recreational sites in the analysis area could increase the number of visitors to the area, which could contribute to the total overall nonmarket benefits associated with recreation, especially those in communities of interest who value recreation.

Environmental Justice

Past, present, and reasonably foreseeable projects and activities in the analysis area (see Appendix J) could contribute to cumulative adverse and disproportionate impacts to environmental justice populations. Projects such as water developments (e.g., Indian Creek Allotment range improvement, East League livestock water wells, and Flats water wells and Kane Gulch fence), recreation infrastructure construction and maintenance (e.g., House of Fire Trailhead project and Hamburger Rock Campground improvements and expansion), ROW developments (e.g., Mancos Mesa ROW access), and forest restoration projects (e.g., Maverick Point project and South Elk Ridge aspen restoration project) would result in surface disturbance, which could lead to cumulative impacts through reduced air quality from increased dust and emissions from prescribed fires or disturbance to resources that are important to environmental justice populations, such as subsistence resources. These impacts would be short term, however, and the surface acreage that

would be disturbed would be small. Additionally, the extent to which environmental justice communities would be disproportionately and adversely impacted would depend on the location of the project; the impacts would need to be analyzed at the implementation level for those projects.

The 2022 BEITC LMP would implement programs that would employ Tribal members from the surrounding regions. This would likely result in cumulative impacts to environmental justice communities, through increased economic contributions and improvements in public services.

3.5.6. Lands and Realty

Lands and realty within the Planning Area are currently administered by the BLM and the USDA Forest Service. The BLM Lands, Realty and Cadastral Survey program facilitates commercial, recreational and conservation activities to ensure that the public lands are working landscapes managed for the use and enjoyment of current and future generations (BLM 2022).

The USDA Forest Service mission for the Lands and Realty Management program secures and protects the American public's rights, title, value, and interests in its national forests and grasslands and authorizes a variety of uses on those lands to meet the needs of present and future generations (USDA Forest Service 2022).

As dictated by FLPMA, the BLM has a responsibility to plan and manage federally owned public lands that are administered by the Secretary of the Interior. Although FLPMA is the overarching guiding law for the Lands, Realty and Cadastral Survey program, the program also operates under a variety of laws, regulations, and policies. Within the Planning Area, approximately 1,075,000 acres (approximately 72% of the Planning Area) of land falls under the management of the BLM.

The USDA Forest Service issues SUPs that authorize the use of NFS lands and makes land tenure adjustments based upon guidance from NFMA, FLPMA, and the 1986 Manti-La Sal LRMP. Within the Planning Area, approximately 289,000 acres (approximately 19% of the Planning Area) falls under the management of the USDA Forest Service.

Additionally, state lands within the Planning Area make up approximately 112,000 acres (7.5% of the Planning Area) and private lands make up approximately 13,000 acres (< 1% of the Planning Area).

3.5.6.1. AFFECTED ENVIRONMENT

3.5.6.1.1. Land Tenure (Ownership) Adjustments

The establishment of BENM under Proclamation 9558 provided, "All Federal lands and interests in lands within the boundaries of the monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the USDA Forest Service, from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument." In December 2017, President Trump announced Proclamation 9681, which modified the boundaries of the Monument to exclude from its designation and reservation approximately 1,150,860 acres of land, leaving 201,876 acres of land under Monument protection.

On October 8, 2021, President Biden signed Presidential Proclamation 10285. Proclamation 10285 restored the Monument boundaries and conditions that existed prior to the issuance of Proclamation 9681 and retained the approximately 11,200 acres added to the Monument by

Proclamation 9681. In doing so, Proclamation 10285 provided, “All Federal lands and interests in lands within the boundaries of the Monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the USDA Forest Service from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument.”

Land tenure activities within BENM could occur through acquisitions, which are achieved through purchases or donations or, in limited situations, exchanges. Cadastral survey services include survey, marking, and documenting boundaries of public lands, special designated areas, ROWs, authorizations, and sites. Standards for Boundary Evidence Certificates and Management of Land Boundaries plans provide boundary evidence risk assessments. The Public Land Survey System Dataset provides geographic coordinates. Surface Management Agency records track administrative jurisdiction, and the land status record systems provides the rights, title, and interest of federal interest lands. Survey and land records locate and document activities and authorizations (BLM 2022).

Landownership adjustments on NFS lands are completed through purchase, donation, exchange, or other authority. Landownership adjustments are made to improve national forest management by consolidating ownership, reducing wildlife-human conflicts, providing for wildlife connectivity, improving public access to public lands, and retaining or acquiring key lands for wildlife, fish, and cultural resources.

3.5.6.1.2. Land Use Authorizations

Avoidance areas encumber approximately 147,742 acres of BLM-administered lands within the Planning Area. These ROW avoidance areas make up approximately 11% of the total Planning Area. From December 4, 2017, to December 4, 2021, no new utility corridors have been approved in the Planning Area. During this time, all major ROW requests in the Planning Area have been located within existing designated corridors or communication sites. New ROW requests are not expected to increase.

Exclusion areas encumber approximately 402,985 acres of BLM-administered lands within the Planning Area. These ROW exclusion areas make up approximately 30% of the Planning Area. Approximately 524,229 acres (38% of the Planning Area) of BLM-administered land is open for ROW authorization without restrictions.

Currently for NFS lands, there are 46,437 acres of ROW exclusion, 32,587 acres of ROW avoidance, and 210,218 acres of ROW open to authorization without restrictions within the Planning Area.

3.5.6.1.3. Utility Corridors

There are currently 7,146 acres (0.53% of the Planning Area) of BLM utility corridors within the Planning Area. In the 2008 Monticello RMP, designated transportation and utility corridors include existing groupings of ROWs for electric transmission facilities, pipelines 16 inches and larger, communication lines, federal and state highways, and major county road systems. Currently, there are no utility corridors on NFS lands within the Planning Area.

3.5.6.1.4. Communication Sites

The BLM typically issues communication use leases for communication facilities on BLM-administered lands. There are three communication sites within the Planning Area: Upper Horse Flat Communication Site (Case File Number UTU-70116), Moss Back Butte Communication Site (Case File Number UTU-54721), and Cedar Mesa Communication Site (Case File Number UTU-20066).

All three communication sites are either currently under a lease renewal or undergoing the lease renewal process. The Upper Horse Flat communication site lease was issued in 1993 for a 30-year term. However, in April 2021, the Monticello FO received an application to renew and amend the existing Upper Horse Flat communication site lease. The BLM is currently working with San Juan County to renew the lease for the site. An application has been received to renew the lease for the Moss Back Butte communication site, which includes some modifications to the ROW grant. The Cedar Mesa communication site has recently undergone a tower replacement, which was completed in 2020. There have been no applications for new communication site leases within the Planning Area in the last 4 years (December 4, 2017–December 4, 2021).

There are two NFS-only communication sites within the Planning Area; however, there are no commercial communication sites on NFS lands within the Planning Area.

3.5.6.1.5. Film Permits

Within the Planning Area, commercial filming generally occurs at Newspaper Rock, the Moki Dugway, SR-95, and Valley of the Gods. The Monticello FO has made a specific effort to accommodate filming activity in these areas. According to the 2008 Monticello RMP, applications for film permits in the Monticello Planning Area are limited to existing highways, roads, and pullouts and previously disturbed areas or cleared areas within the FO (including Valley of the Gods, the Moki Dugway, SR-211, Newspaper Rock, and SR-95).

The BLM issued 16 film permits in the planning area in 2017, and the number is expected to continue to increase since Proclamation 10285 has restored the boundaries of the Monument;

The number of film permits the BLM has issued in the last 5 years is as follows:

- 2018 – six film permits
- 2019 – 11 film permits
- 2020 – seven film permits
- 2021 – three film permits
- 2022 – no film permits
- 2023 – one film permit

The USDA Forest Service is currently authorizing film permits on a case-by-case basis. The USDA Forest Service has authorized four film permits in the last 5 years.

3.5.6.2. ENVIRONMENTAL CONSEQUENCES

3.5.6.2.1. Issue

- How would proposed land use allocations and discretionary uses affect land use authorizations and land tenure within the Planning Area?

3.5.6.2.2. Impacts Common to All Alternatives

Land Tenure (Ownership) Adjustments

Under all alternatives, subject to valid existing rights, BENM would be withdrawn from all forms of entry, location, selection, sale, or other disposition under public land laws or laws applicable to the BLM and USDA Forest Service; from location, entry, and patent under mining laws; and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of BENM. Although this RMP/EIS would not revoke any existing withdrawal, reservation, or appropriation, BENM would be the dominant reservation.

Additionally, under all alternatives, agencies would collaborate with the BEC and Tribal Nations on Management of Land Boundaries planning, including but not limited to developing implementation-level Management of Land Boundaries plans for high risk, high valued lands, including special designated areas, inholdings, and other valid existing rights, ROWs, and BENM boundaries.

Land Use Authorizations

Under all alternatives, all ROW requests within avoidance areas would be required to meet the following criteria:

- The proposed ROW would be consistent with the proper care and management of the objects of BENM.

Utility Corridors

Under all alternatives, the BLM would retain the existing designated corridors, and there would be no new designated corridors on BLM-administered and NFS lands within the Planning Area. The existing 7,146 acres (0.53% of the Planning Area) of BLM utility corridors within the Planning Area would continue to exist. Additionally, there are no utility corridors that fall within NFS lands within the Planning Area.

Communication Sites

Under all alternatives, the three existing communication sites on BLM-administered lands would continue the process of renewing or undergoing the lease renewal process. The two NFS-only communication sites would continue to exist within the Planning Area.

Film Permits

There are no impacts to film permits that are common to all alternatives. Under all alternatives, film permits would continue to be issued with varying management.

3.5.6.2.3. Impacts under Alternative A

Land Tenure (Ownership) Adjustments

Under Alternative A, land tenure adjustments would occur if the land acquisitions of potential/occupied special status species habitat would be increased. Under Alternative A, lands would be considered for acquisition if the changes are in accordance with the current resource management objectives, other RMP decisions, and existing activity plans, including government interests, a gain of manageable resources on public lands, and to ensure public access to lands. Under Alternative A, land acquisitions would be managed in the same manner as adjoining lands, unless acquired for a specific purpose. Under this alternative, land exchanges would be given

priority; the State of Utah would resolve inholding issues and the BLM would assist the state in identifying opportunities for land tenure agreements that further its mission.

Additionally, the USDA Forest Service would prioritize lands for acquisition if the land meets resource management goals, provides habitat for T&E species, has cultural resources, is suitable for development by the private sector, and when important resource effects are mitigated by reserving interests to protect the resource. The USDA Forest Service would affect jurisdictional transfers that improve and enhance management and administration operations.

Land Use Authorizations

Under Alternative A, WSAs and wilderness areas would continue to be ROW exclusion areas on BLM-administered lands, and the BLM would continue to grant the State of Utah reasonable access to state lands for economic purposes on a case-by-case basis. BLM-administered lands in the Planning Area totaling 402,985 acres would remain ROW exclusion areas; 147,742 acres of land would remain ROW avoidance areas; and the remaining 524,229 acres would continue to be opened to ROW authorization without restrictions (see Appendix A, Figure 2-20, Alternative A, rights-of-way and authorizations). Applications for new ROWs would continue to be considered on a case-by-case basis, accounting for areas identified as ROW exclusion and avoidance areas. Wind and solar energy development would continue to be authorized by ROW grants.

Under Alternative A, the USDA Forest Service would continue to have 46,298 acres of land allocated as ROW exclusion areas, 32,587 acres of land allocated as ROW avoidance areas, and 210,218 acres of land allocated as open to ROW authorization; however, no acres of land would be allocated as special use avoidance areas. Therefore, SUPs would continue to be considered on all NFS lands within the Planning Area on a case-by-case basis.

In total, approximately 449,283 acres of land within the Planning Area would remain ROW exclusion areas; 180,329 acres of land within the Planning Area would remain ROW avoidance areas; and 734,447 acres of land would remain open to ROW authorization. To request a ROW within an avoidance area under Alternative A, the applicant would need to demonstrate that there is no practicable route outside of the unit.

Utility Corridors

Under Alternative A, new ROWs could be authorized without restriction within existing utility corridors as the existing utility corridors would fall within BLM-administered ROW open areas.

Communication Sites

Under Alternative A, the BLM and USDA Forest Service would continue to authorize communication site facilities in areas open to new ROWs. Under Alternative A, the BLM would administer 734,447 acres (54% of the Planning Area) as open to ROW authorizations, and these areas, along with the 180,329 acres of ROW avoidance areas, would be available for new communication sites. Therefore, under Alternative A, there would likely be a continuous increase in communication sites within the Planning Area.

Film Permits

Under Alternative A, commercial filming would continue to be allowed within all areas of the Planning Area, provided the minimum impact filming criteria are met. The use of aircraft would also continue to be allowed; however, no landing, taking off, or dropping or picking up any material or supplies with UAS would be allowed within designated wilderness. Additionally, film permittees

would continue to observe Federal Aviation Administration (FAA) flight advisory(ies) for flying over designated wilderness.

3.5.6.2.4. Impacts under Alternative B

Under Alternative B, all lands and realty actions would be completed in collaboration with the BEC including seasonality and resource rest. Additionally, the BLM and USDA Forest Service would work with private landowners on reasonable access as consistent with Proclamation 10285.

Land Tenure (Ownership) Adjustments

Unlike Alternative A, acquisition of lands under Alternative B within BENM would only be pursued with willing sellers or by donation where it would provide for the protection of the objects for which BENM was designated. Land tenure (ownership) adjustments are therefore stricter under Alternative B as only lands that align with BENM objectives would be considered for acquisition. Any acquired lands would be managed as a portion of BENM in the same manner as adjacent lands in BENM unless they require specific management related to the protection of BENM objects. This action is consistent with the 2022 BEITC LMP.

Land Use Authorizations

Under Alternative B, approximately 407,038 acres of BLM-administered lands would be ROW exclusion areas (approximately 1% more acres than under Alternative A); 662,439 acres of BLM-administered lands would be ROW avoidance areas (348% more acres than under Alternative A); and 5,477 acres of BLM-administered lands would be open to ROW authorizations without restrictions (1% of Alternative A) (see Appendix A, Figure 2-21, Alternative B, rights-of-way and authorizations). No wind and solar energy development would be allowed on BLM-administered lands within the Planning Area; however, non-wind and solar energy development projects could establish new ROWs on lands open to ROW authorizations without restrictions, or in ROW avoidance areas, if the proper criteria are met. To request a ROW within an avoidance area under Alternative B, the applicant would need to demonstrate that there is no practicable route outside of the area.

A total of 46,343 acres of NFS lands within the Planning Area would be designated as ROW exclusion areas (0.09% more acres than under Alternative A) and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use avoidance areas (200% more than under Alternative A). The issue of SUPs involving any non-recreational uses, short or long term, on NFS lands would be allowed throughout BENM, if consistent with protecting BENM objects.

Utility Corridors

Under Alternative B, ROWs could be authorized within existing utility corridors. Existing BLM utility corridors, however, would fall within ROW avoidance areas; therefore, ROWs could be authorized within existing utility corridors if the following criteria are met:

- The applicant can demonstrate that there is no practicable route outside of the area.
- The proposed ROW would be consistent with the proper care and management of the objects of BENM.

This would impact project applicants interested in establishing new ROWs within or through BENM; it is likely they would have to route around BENM or carefully route their ROW within the 5,477 acres of land open for ROWs. This alternative is more restrictive than Alternative A and would likely result in fewer ROW applications.

Communication Sites

Under Alternative B, 5,477 acres of land would be managed as open to ROWs and 662,439 acres managed as ROW avoidance areas would be available for new communication sites. Although this is a 27% decrease from Alternative A, this decrease would likely not affect the development of new communication sites because there are only three communication sites on BLM-administered lands and no commercial communication sites on NFS lands within the Planning Area. Under this alternative, the Upper Horse Flat and Moss Back Butte communication sites would likely be renewed. New communication sites could occur under this alternative; however, no new communication sites have been applied for within the Planning Area within the last 4 years.

Film Permits

Similar to Alternative A, commercial filming would be allowed in the Planning Area as long as the minimum impact filming criteria are met; however, under Alternative B, commercial filming would not be allowed in designated wilderness and USDA Forest Service–recommended wilderness. The use of aircraft would also continue to be allowed; however, no landing, taking off, or dropping or picking up any material or supplies with a UAS would be allowed within designated wilderness. Additionally, film permittees would continue to observe FAA flight advisory(ies) for flying over designated wilderness. These additional restrictions on filming would likely reduce the number of film permit applications, relative to Alternative A.

3.5.6.2.5. Impacts under Alternative C

Under Alternative C, all lands and realty actions would be completed in collaboration with the BEC, including seasonality and resource rest. Additionally, the BLM and USDA Forest Service would work with private landowners on reasonable access as consistent with Proclamation 10285.

Land Tenure (Ownership) Adjustments

Unlike Alternative A, acquisition of lands under Alternative C within BENM would only be pursued with willing sellers or by donation where it would provide for the protection of the objects for which BENM was designated. This action is consistent with the 2022 BEITC LMP. Land tenure (ownership) adjustments are therefore stricter under Alternative C, because only lands that align with BENM objectives would be considered for acquisition. Any acquired lands would be managed as a portion of BENM in the same manner as adjacent lands in BENM unless they require specific management related to the protection of BENM objects.

Land Use Authorizations

Under Alternative C, approximately 505,935 acres of BLM-administered lands would be ROW exclusion areas (approximately 26% more acres than under Alternative A); 569,020 acres of BLM-administered lands would be ROW avoidance areas (285% more acres than under Alternative A); and no acres of BLM-administered lands would be open to ROW authorizations without restrictions (0% of Alternative A) (see Appendix A, Figure 2-22, Alternative C, rights-of-way and authorizations). This would impact project applicants interested in establishing new ROWs within or through BENM; it is likely they would have to route around BENM as there would be no ROW open areas within the Planning Area under this alternative. However, applicants would be able to request a ROW within an avoidance area under Alternative C if they are able to demonstrate that there is no practicable route outside of the area. No wind and solar energy development would be allowed within BLM-administered lands within the Planning Area.

A total of 46,343 acres of NFS lands within the Planning Area would be designated as ROW exclusion areas (0.09% more acres than under Alternative A) and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use avoidance areas (200% more than under Alternative A). Issuance of SUPs involving any non-recreational uses, short or long term, on NFS lands would be allowed throughout BENM if consistent with protecting BENM objects, and consideration of these permits would be done in coordination with the BEC.

Utility Corridors

Under Alternative C, ROWs could be authorized within existing utility corridors and ROW avoidance areas; however, existing BLM utility corridors would fall within ROW avoidance areas in the Planning Area. Therefore, ROWs could be authorized within existing utility corridors if the following criteria are met:

- The applicant can demonstrate that there is no practicable route outside of the area.
- The proposed ROW would be consistent with the proper care and management of the objects of BENM.

This would impact project applicants interested in establishing new ROWs within or through BENM; it is likely they would have to route around BENM or within the 569,020 acres of ROW avoidance areas, as there would be no ROW open areas within the Planning Area under this alternative. This alternative is more restrictive than Alternative A and would likely result in fewer ROW applications.

Communication Sites

Under Alternative C, new communication sites would be allowed but only in ROW avoidance areas, as no land would be open to ROW authorizations; however, this decrease would likely not affect the development of new communication sites, because there are only three total communication sites on BLM-administered lands and no commercial communication sites on NFS lands within the Planning Area. Under this alternative, the Upper Horse Flat and Moss Back Butte communication site leases would likely be renewed.

Film Permits

Under Alternative C, commercial filming would be allowed in the Planning Area, with the exception of designated wilderness and USDA Forest Service–recommended wilderness and as long as the minimum impact filming criteria are met; however, film permittees would not be allowed to use aircraft and UAS. These additional restrictions on filming would likely substantially reduce the number of film permit applications, relative to Alternative A.

3.5.6.2.6. Impacts under Alternative D

Under Alternative D, all lands and realty actions would be completed in collaboration with the BEC, including seasonality and resource rest. Additionally, the BLM and USDA Forest Service would work with private landowners on reasonable access as consistent with Proclamation 10285.

Land Tenure (Ownership) Adjustments

Unlike Alternative A, acquisition of lands under Alternative D within BENM would only be pursued with willing sellers or by donation where it would provide for the protection of the objects for which BENM was designated. This action is consistent with the 2022 BEITC LMP. Land tenure (ownership) adjustments are therefore stricter under Alternative D, because only lands that align with BENM objectives would be considered for acquisition. Any acquired lands would be managed as a portion

of BENM in the same manner as adjacent lands in BENM unless they require specific management related to the protection of BENM objects.

Land Use Authorizations

Under Alternative D, approximately 802,678 acres of BLM-administered lands would be ROW exclusion areas (approximately 99% more acres than under Alternative A); 272,278 acres of BLM-administered lands would be ROW avoidance areas (84% more acres than under Alternative A); and no acres of BLM-administered lands would be open to ROW authorizations without restrictions (0% of Alternative A) (see Appendix A, Figure 2-23, Alternative D, rights-of-way and authorizations). This would impact project applicants interested in establishing new ROWs within or through BENM; it is likely they would have to route around BENM because there would be no ROW open areas within the Planning Area under this alternative; however, applicants would be able to request a ROW within an avoidance area under Alternative D if they are able to demonstrate that there is no practicable route outside of the area. No wind and solar energy development would be allowed within BLM-administered lands within the Planning Area.

A total of 46,343 acres of NFS lands within the Planning Area would be designated as ROW exclusion areas (0.09% more acres than under Alternative A), and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use avoidance areas (200% more than under Alternative A). Issuance of SUPs involving any non-recreational uses, short or long term, on NFS lands would be allowed throughout BENM if consistent with protecting BENM objects, and consideration of these permits would be done in coordination with the BEC.

Utility Corridors

Under Alternative D, ROWs could be authorized within existing utility corridors and ROW avoidance areas. Existing BLM utility corridors, however, would fall within ROW avoidance areas in the Planning Area. Therefore, ROWs could be authorized within existing utility corridors if the following criteria are met:

- The applicant can demonstrate that there is no practicable route outside of the area.
- The proposed ROW would be consistent with the proper care and management of the objects of BENM.

This would impact project applicants interested in establishing new ROWs within or through BENM; it is likely they would have to route around BENM or within the 272,278 acres of ROW avoidance areas, because there would be no ROW open areas within the Planning Area under this alternative. This alternative is more restrictive than Alternative A and would likely result in fewer ROW applications.

Communication Sites

Under Alternative D, new communication sites would be allowed, but only in ROW avoidance areas because no land would be open to ROW authorizations. This decrease would likely not affect the development of new communication sites, however, because there are only three communication sites on BLM-administered lands and no commercial communication sites on NFS land within the Planning Area. Under this alternative, the Upper Horse Flat and Moss Back Butte communication site leases would likely be renewed.

Film Permits

Under Alternative D, no commercial filming would be allowed within the Planning Area, and no film permits would be issued in WSAs. Aircraft takeoffs and landings would be prohibited within the Planning Area for any non-administrative and non-emergency purposes. Public UAS usage would be prohibited; however, permitted UAS use that would benefit the protection of BENM objects may be allowed via formal authorization. Such authorizations would be granted by the agencies in coordination with the BEC. The prohibition on film permits would substantially impact film permit applications, relative to Alternative A.

3.5.6.2.7. Impacts under Alternative E

Under Alternative E, all lands and realty actions would be completed in collaboration with the BEC including seasonality and resource rest. Additionally, the BLM and the USDA Forest Service would work with private landowners on reasonable access as consistent with Proclamation 10285.

Land Tenure (Ownership) Adjustments

Unlike Alternative A, acquisition of lands under Alternative E within BENM would only be pursued with willing sellers or by donation where it would provide for the protection of the objects for which BENM was designated. This action is consistent with the 2022 BEITC LMP. Land tenure (ownership) adjustments are therefore stricter under Alternative E as only lands that align with BENM objectives would be considered for acquisition. Any acquired lands would be managed as a portion of BENM in the same manner as adjacent lands in BENM unless they require specific management related to the protection of BENM objects.

Land Use Authorizations

Under Alternative E, approximately 1,058,613 acres of BLM-administered lands would be ROW exclusion areas (approximately 166% more acres than under Alternative A); 16,342 acres of BLM-administered lands would be ROW avoidance areas (approximately 11% of Alternative A); and no acres of BLM-administered lands would be open to ROW authorizations without restrictions (0% of Alternative A) (see Appendix A, Figure 2-24, Alternative E, rights-of-way and authorizations). This would impact project applicants interested in establishing new ROWs within or through BENM; it is likely they would have to route around BENM, because there would be no ROW open areas within the Planning Area under this alternative. Applicants would be able to request a ROW within an avoidance area under Alternative E, however, if they are able to demonstrate that there is no practicable route outside of the area. No wind and solar energy development would be allowed within BLM-administered lands within the Planning Area.

A total of 46,343 acres of NFS lands within the Planning Area would be designated as ROW exclusion areas (0.09% more acres than under Alternative A), and the remaining 242,774 acres of NFS lands would be designated as USDA Forest Service special use authorization avoidance areas (200% more than under Alternative A). Issuance of SUPs involving any non-recreational uses, short or long term, on NFS lands would be allowed throughout BENM if consistent with protecting BENM objects, and consideration of these permits would be done in coordination with the BEC.

Utility Corridors

Under Alternative E, new ROWs could be authorized within existing utility corridors and ROW avoidance areas. Existing BLM utility corridors, however, would fall within ROW avoidance areas in the Planning Area; therefore, new ROWs could be authorized within existing utility corridors if the following criteria are met:

- The applicant can demonstrate that there is no practicable route outside of the area.
- The proposed ROW would be consistent with the proper care and management of the objects of BENM.

This would impact project applicants interested in establishing new ROWs within or through BENM; it is likely they would have to route around BENM or within the 16,342 acres of ROW avoidance areas, because there would be no ROW open areas within the Planning Area under this alternative. This alternative is more restrictive than Alternative A and would likely result in fewer ROW applications.

Communication Sites

Under Alternative E, new communication sites would be allowed only in the 16,342 acres of lands designated as ROW avoidance areas, because no land would be open to ROW authorizations. This decrease could affect the development of new communication sites and the maintenance of existing communication sites. Under this alternative, the Upper Horse Flat and Moss Back Butte communication site leases would likely be renewed with new stipulations such as adhering to VRM Class I objectives, which require the existing character of the landscape to be preserved.

Film Permits

Under Alternative E, no commercial filming would be allowed within the Planning Area, and no film permits would be issued in WSAs. Aircraft takeoffs and landings would be prohibited within the Planning Area for any non-administrative and non-emergency purposes. Public UAS usage would be prohibited; however, permitted UAS use that would benefit the protection of BENM objects may be allowed via formal authorization. Such authorizations would be granted by the agencies in coordination with the BEC. The prohibition on film permits would substantially impact film permit applications, relative to Alternative A.

3.5.6.2.8. Cumulative Impacts

Lands and realty actions underway, which are proceeding to the extent legally possible, could be affected by decisions in this RMP/EIS. Depending on RMP/EIS decisions, new ROW projects could potentially occur within the Planning Area. Additionally, there are ROWs set to expire in the Planning Area in 2023, and these ROWs could be renewed or reissued (see Appendix J).

There is also a ROW proposal to construct a 300,000-gallon water storage tank on BLM-administered lands within the Planning Area. This project would create approximately 2 acres of disturbance, pending RMP/EIS decisions. Utah State University is seeking a ROW to disturb less than 0.01 acre of land for soil sampling. These two projects could likely occur on either ROW open or ROW avoidance areas on BLM-administered lands within the Planning Area under any alternative.

Summit Operating, LLC, is seeking an approximately 8-mile ROW outside the Planning Area. Although this does not directly impact BENM, depending on RMP/EIS decisions, there could be many additional requests seeking ROWs adjacent to the Planning Area if projects are not able to route through BENM. These developments would increase development in localized areas next to communities and could transform these areas into more urbanized settings. Additionally, it is unknown how much land adjacent to the Planning Area could support additional ROW projects.

Currently, the applicant of the Mancos Mesa ROW access project is seeking another ROW on BLM-administered lands within the Planning Area. These 8 acres of disturbance would allow access to

six Utah Trust Lands sections in order to perform maintenance on existing stock ponds and to drill and develop new water wells. This project could occur on ROW open or avoidance areas under any alternative if the ROW avoidance criteria are met.

A ROW for a temporary access road to access state land to drill a livestock water well at Fry Canyon is also being currently sought and would involve 0.15 acre of ground disturbance. This project could occur on ROW open or avoidance areas under any alternative if the ROW avoidance criteria are met.

Pending RMP/EIS decisions, if ROWs are not approved within BENM, adjacent lands surrounding BENM could see impacts from such developments, potentially impacting local communities and surrounding landowners (see Appendix J).

Two pieces of legislation, both entitled the Utah School and Institutional Trust Lands Administration Exchange Act of 2023, have been introduced in Congress. If enacted, both bills would direct the BLM to acquire approximately 162,500 acres of lands and interests in lands located largely within the exterior boundaries of BENM and managed by the Utah Trust Lands Administration in exchange for the Utah Trust Lands Administration acquiring approximately 167,000 acres of public lands located throughout the state of Utah. If acquired by the BLM, the lands and interests in lands located within the exterior boundaries of BENM would become part of the Monument and managed accordingly.

3.5.7. Recreation Use and Visitor Services

Recreational resources in the Planning Area are managed by the BLM and the USDA Forest Service. The Planning Area is surrounded by popular public lands containing a wide variety of recreation opportunities, including Glen Canyon NRA, Goosenecks State Park, Canyonlands National Park, NBNM, as well as lands within the BLM Monticello FO and Manti-La Sal National Forest.

Public recreational uses in the Planning Area include cultural site visitation, hiking, camping, backpacking, OHV riding, scenic driving, canyoneering, rock climbing, rafting and boating, heritage tourism, mountain biking, hunting, and other activities. Current recreational uses are largely consistent with management goals established in the 2020 ROD/MMPs, 2008 Monticello RMP and the 1986 Manti-La Sal LRMP, as amended.

3.5.7.1. AFFECTED ENVIRONMENT

As described in Proclamation 10285, BENM contains numerous opportunities for people to experience the landscape through recreation, including rock climbing, hiking, birding, horseback riding, hunting, backpacking, canyoneering, whitewater rafting, mountain biking, camping, and other activities. These world-class recreation opportunities within BENM contribute to the social and economic well-being of local individuals and communities. Recreation also benefits the expanding travel and tourism-based economy of the region and serves as a conduit connecting cultures to the land. As noted in the 2022 BEITC LMP, recreation management, if appropriately developed, can also be a tool for cross-cultural education, and can educate visitors about traditional cultures via their experience of the landscape.

3.5.7.1.1. BLM

This RMP/EIS process results in the allocation of recreation uses throughout the BLM-administered lands in the Monument, and these are discussed by alternative. This process requires decisions to be made regarding desired outcomes and allowable uses related to recreation and visitor services.

The BLM's uses "outcomes-focused management" that focused on positive outcomes obtained through recreational experiences. BLM manages RMAs and RMZs in BENM to protect and enhance a targeted set of desired RSCs, which include operational, social, and physical qualities. Given this, it is also necessary to plan for "on-the ground" implementation actions that consider site-specific planning implications related to the plan; these implementation decisions fall into four categories: 1) management; 2) administration; 3) information and education; and 4) monitoring.

The BLM currently manages recreational uses in BENM using both SRMAs and ERMA. SRMAs are administrative units that the BLM recognizes for their unique value, importance, or distinctiveness. SRMAs are managed to sustain/enhance recreation objectives, protect desired RSCs, and constrain uses that would be to the detriment of meeting recreation or critical resource objectives within the SRMA. ERMA manage recreational resources commensurate with the management of other resources and resource uses and do not include specific, measurable recreation outcomes. Appendix E provides detailed information about key aspects of the BLM's recreation planning approach, including RMAs. The appendix also provides more detailed information about RSC definitions in BENM along with the management framework for each of the Monument's SRMAs and ERMA.

Table 3-126 lists RMIS data regarding visits (not visitor hours) from 2012 through 2022 to SRMAs and ERMA on BENM. RSCs are linked to various outcomes for the visitor, such as recreational experiences and benefits. The benefits can be personal (e.g., well-being), social/community (e.g., building social skills), economic (when activities support local businesses such as outfitters), and environmental (e.g., improved understanding of natural and cultural resources). RSCs range from urban (developed areas) along a continuum to remote. Rural and Urban RSCs are not present on BENM, but Remote, Back Country, Middle Country, and Front Country RSCs are within BENM. Appendix E elaborates on the qualities of the RSC categories in BENM as defined by the Monticello FO. The various RSCs lead to differing outcomes for the visitor, who may seek out different experiences based on the setting.

Table 3-126. BLM Recreation Management Area Visit Data

BENM Unit	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Beef Basin ERMA	2,179	2,945	2,952	898	949	958	858	554	631	1,033	1,720
Canyon Rims SRMA	14,964	13,059	16,015	22,735	28,052	35,175	31,430	15,120	12,096	67,492	54,266
Cedar Mesa SRMA	32,897	73,158	74,702	65,209	76,390	131,516	140,136	147,433	81,079	109,155	106,398
Dark Canyon ERMA	1,510	2,125	1,505	1,642	1,594	3,268	2,879	2,708	2,794	3,080	2,385
Indian Creek SRMA	14,961	106,048	111,028	129,472	147,761	187,511	209,049	216,224	18,104	37,439	25,684
Indian Creek SRMA (est. 2020)	x	x	x	x	x	x	x	x	125,911	298,826	270,551
Monticello ERMA	21,325	24,956	26,690	28,962	32,150	38,533	39,420	42,538	31,838	59,779	29,891
San Juan River SRMA	39,853	35,864	38,931	41,049	38,801	41,393	38,708	40,283	33,611	39,092	45,272
Shash Jáa (est. 2020)	x	x	x	x	x	x	x	x	35,336	71,504	64,006
Total	127,689	258,155	271,823	289,967	325,697	438,354	462,480	464,860	341,400	687,400	600,173

Sources: BLM (2012, 2013, 2014a, 2015, 2016a, 2017, 2018, 2019b, 2020, 2021a, 2022).

Note: est. = established; x = BENM units without area visitor data because the unit was not established until 2020.

Known recreation use activities in BENM include hiking, camping, backpacking, OHV riding, automobile touring, equestrian activities, canyoneering, rock climbing, wildlife viewing, photography, hunting, and cycling. Cultural site visitation, hiking, camping, backpacking, OHV/motorcycle riding, scenic driving, canyoneering, sightseeing, picnicking, rock climbing, rafting and boating, heritage tourism, mountain biking, and hunting are the most common recreation uses (BLM 2019a). There are no recent indications of significant change related to the primary types of recreation activities in the Planning Area.

Notably, recreational opportunities in BENM are not evenly distributed either geographically or temporally. Due to variations in geology, elevation, and topography, in addition to the presence or absence of water and cultural sites across the landscape, the “supply” of different types of recreational opportunities is discrete. Due to the absence of reliable water throughout most of the area, backpacking is confined mostly to the Dark Canyon Wilderness and WSA (USDA Forest Service and BLM), Cedar Mesa, and some canyons on NFS lands in the Monument. The distribution of rock formations means that the vast majority of climbing in BENM takes place in Indian Creek in the early spring and late fall, with some seldom-visited destinations scattered in the southern part of the Monument. Additionally, boating is only available on the San Juan River. Technical canyoneering on BLM-administered lands occurs in the White Canyon network, whereas OHV riding is more distributed along the vast network of maintained B roads and unmaintained D roads. Due to snow and water access, that activity has very distinct spring and fall seasons on BLM-administered lands and a summer season on NFS lands. Some areas, such as Mancos Mesa, are so difficult to access that they are seldom used. This uneven distribution of recreational opportunities is important to bear in mind when considering recreation on BENM.

In terms of temporal variability, the majority of BLM sites—including Beef Basin, Bullet Canyon, House on Fire, Mule Canyon, Newspaper Rock, Donnelly Canyon, Fish Canyon, Owl Canyon, and the Citadel—experience two annual peaks in visitation. The first peak occurs in April/May, and the second in October (BLM 2023a). This seasonality of visitation is likely due to the influence of weather, with high temperatures in the summer months discouraging visitation.

Visitation and Visitor Experience

The BLM reports recreation visitation estimates using the RMIS, an internal database. The RMIS estimates participation in 65 recreation activities recorded at BLM sites and areas; these estimates are based on visitor registrations, permit records, observations, road and trail counter data, and professional judgment. Visitation is estimated by the number of visits and visitor days. A visit is the entry of a visitor onto lands or waters administered by the BLM for the pursuit of recreational experiences, regardless of visit duration. A visitor day is a common recreation unit of measure used among federal agencies that represents an aggregate of 12 visitor hours at a single site or area (this could be two visitors staying on-site for 6 hours each, for example).

Recreation visitation in the Planning Area has been monitored for many years; however, recorded visitor numbers do not fully capture the total level of recreation use due to the presence of multiple access points, a lack of permit and visitor register compliance, the locations of traffic counters, and the agency’s resulting inability to count visitation in every location. Direct monitoring by BLM personnel is typically focused on the areas of highest use or conflict and is therefore less frequent in remote settings. In addition, many popular use areas and trails are not designated, making it more difficult to accurately determine the actual amount of recreational use these areas receive.

In order to better understand public demand for specific recreational activities, experiences, benefits, and the RSCs which facilitate those outcomes within BENM, the BLM Monticello FO commissioned University of Alaska Fairbanks researchers to conduct recreational use studies in

two subunits of BENM (Fix et al. 2023): Cedar Mesa (including the River House site on San Juan River) and Indian Creek. The researchers prepared a report summarizing the study’s findings for these two subunits. A total of 778 on-site surveys were completed in the fall of 2020 (494 at Indian Creek and 284 at Cedar Mesa).

The study found that visitor motivations, demographics, and experiences differed between the two subunits. Indian Creek visitors tended to be younger and traveling with friends. The following were the primary recreational activities for visitors to the area:

- Rock climbing (73%)
- Camping (70%)
- Day hiking (39%)

Cedar Mesa visitors, on the other hand, were older and were primarily engaged in the following activities:

- Day hiking (92%)
- Exploring cultural sites (81%)
- Driving/sightseeing (64%)
- Camping (61%)
- Photography (59%)

The study also assessed mean desirability, defined as the level of desirability of the experiences of participants during their trip. Respondents at both Cedar Mesa and Indian Creek rated “experiencing the natural surroundings” and “enjoying the scenery” as their most desirable experiences during their visit to BENM. Experience desirability and personal benefits desirability rankings of Indian Creek respondents differed from Cedar Mesa respondents for several factors, as summarized in Table 3-127 and Table 3-128. Visitors to Cedar Mesa are interested in learning about the history and cultural resources of BENM, while visitors to Indian Creek are more interested in participating in challenging outdoor recreational activities (namely, rock climbing).

Table 3-127. Key Differences in Experiences Desirability

Cedar Mesa	Indian Creek
Learning more about BENM (4.13)	Learning more about BENM (3.48)
Doing something with my family (3.41)	Doing something with my family (2.68)
Being with friends (3.06)	Being with friends (4.07)
Developing my skills and abilities (2.96)	Developing my skills and abilities (4.14)
Enjoying risk-taking adventure (2.39)	Enjoying risk-taking adventure (3.42)

Source: Fix et al. (2023).

Note: Desirability is measured on a five-point scale where 1 = not at all desirable and 5 = very high desirability.

Table 3-128. Key Differences in Personal Benefits Desirability

Cedar Mesa	Indian Creek
Increased appreciation of area’s cultural history (4.21)	Increased appreciation of area’s cultural history (3.61)
Greater freedom from urban living (3.18)	Greater freedom from urban living (3.96)
Greater self-reliance (2.89)	Greater self-reliance (3.66)

Cedar Mesa	Indian Creek
Stronger ties with my friends (2.81)	Stronger ties with my friends (3.76)
Improved self-confidence (2.65)	Improved self-confidence (3.77)

Source: Fix et al. (2023).

Note: Desirability is measured on a five-point scale where 1 = not at all desirable and 5 = very high desirability.

Fix et al. (2023) found most Indian Creek respondents desired less evidence of use (meaning they support rehabilitation of recreation settings and reduction of signs of other visitors' use of an area). Indian Creek visitors also expressed a desire for more interpretive signs and recreational facilities. Approximately half of all Cedar Mesa users, in general, reported wanting less evidence of use, fewer motorized routes, and smaller group sizes. Additionally, one-third of all Cedar Mesa respondents felt a need for more visitor information, directional signage, and BLM staff presence (Fix et al. 2023).

The request for such informational materials, in coordination with the high desirability at Cedar Mesa for increased appreciation of the area's cultural history, provides a significant opportunity for the creation of educational resources incorporating Traditional Indigenous Knowledge. Unmanaged recreation and tourism threaten the objects of BENM; visitation can be a beneficial method of cultural education for the public, if appropriate and culturally sensitive modes of thinking and visitation can be effectively communicated (see Appendix L).

Visitor satisfaction data from fiscal year 2019 in the Government Performance and Results Act (GPRA) survey for the BENM Shash Jaa Unit indicated that 88% of visitors felt satisfied regarding their experience at BENM (BLM 2019c).²⁴ That measure was even higher for the GPRA visitor survey for the San Juan River area of BENM, with 90% of visitors reporting feeling satisfied with their experience (BLM 2021b). Notably, the majority of respondents reported satisfaction with the BLM's provision of useful maps, brochures, and information from the Internet; public awareness of rules and regulations; and on-site signage for direction and orientation (BLM 2019c). Overall satisfaction with visitor and recreation management, condition of developed facilities, and protection of natural and cultural resources were all ranked as satisfactory by over 80% of respondents (BLM 2019c). Seventy-four percent of respondents reported feeling satisfied with the overall quality of BLM visitor information; 75% were satisfied with the BENM interpretive and educational programs; and 76% were satisfied with the interpretive and educational program for the San Juan River, leaving some room for improvement (BLM 2019c, 2021b).

Recreation Management Areas

RMA's are the BLM's primary means for planning and managing recreational use of public lands. Public lands are identified for recreation as a SRMA or an ERMA, and all lands that are not designated as either a SRMA or ERMA are considered public lands not designated. BLM guidance and the definition of an ERMA have changed since RMA designations were made in the 2008 RMP. ERMA's were previously managed similar to undesignated public lands and included all areas within the Monticello FO that were not designated as SRMA's. SRMA's recognize unique and distinctive recreation values that are managed to enhance a targeted set of activities, experiences, benefits, and RSCs, which becomes the priority management focus. These areas often have high levels of recreation activity or valuable natural resources. ERMA's recognize existing recreation use, demand, or recreation and visitor services program investments. They are managed commensurate with other resources and uses to sustain the ERMA's principal recreation activities and associated

²⁴ Possible responses to the GPRA survey questions include "very poor," "poor," "average," "good," and "very good." The satisfaction measure represents combined visitor survey responses of "good" and "very good" (BLM 2019b).

qualities and conditions. Appendix E provides detailed information about each of the Monument's SRMAs and ERMA's.

An RMA may be subdivided into RMZs to further delineate specific recreation opportunities (e.g., motorized vs. non-motorized zones). SRMAs may be subdivided into RMZs with discrete objectives. SRMA/RMZ objectives must define the specific recreation opportunities (i.e., activities, experiences, and benefits derived from those experiences), which become the focus of recreation and visitor services management. ERMA's may be subdivided into RMZs to ensure recreation and visitor services are managed commensurate with the management of other resources and uses. For public lands not designated, the BLM manages to meet basic recreation and visitor services and resource stewardship needs. Recreation is not emphasized on these lands; however, recreation activities may occur except on those lands closed to public use. Recreation and visitor services are managed to allow recreation uses that are not in conflict with the primary uses of these lands.

Currently, the BLM manages 10 SRMAs and two ERMA's in BENM (Tank Bench SRMA and White Canyon ERMA are not in the RMIS database and are therefore not accounted for in Table 3-126). The portions of the Canyon Rims SRMA and the San Juan River SRMA that are outside the Planning Area will continue to be managed under their respective RMPs. These are shown in Appendix A, Figure 3-39, Recreational lands categorization in the Monument.

Dispersed Recreation

Dispersed recreation occurs where there are no formal recreational facilities, mostly along or adjacent to roads, and includes activities such as driving for pleasure, camping, hiking or mechanized trail use, hunting, fishing, and wilderness travel. Factors such as population growth, available leisure time, and energy costs (e.g., gasoline) affect this use. As dispersed recreation activities in BENM increase, use may need to be further managed or limited in certain areas to reduce resource damage and/or conflict with other resource uses while maintaining the desired opportunities and quality of the recreation experience.

Demand for developed and dispersed camping use is expected to increase in areas throughout the Planning Area due to general visitation increases and the proliferation of RV and camper van rentals, which make these opportunities more accessible to a broader range of visitors. There are limited developed sites within the Planning Area. During busy spring and fall weekends, it can be difficult to find an open dispersed site near a designated route and trailhead parking areas. Large vehicles, such as camper vans, RVs, and trailers, have also increased within the Planning Area. Dispersed camping areas provide scenic views, easy accessibility from the road, opportunities for solitude, and no fees but offer no built amenities. BLM monitoring data have shown impacts to soil and vegetation, some human waste and litter, multiple access points, the increasing size of disturbed areas, and in some cases, damage to archaeological resources in such areas (BLM 2023b; Nelson 2021).

Generally, human presence has been changing the characteristics of the Monument, bringing many new sources of noise and environmental pollution into BENM as visitation increases, and even changing the scenic quality of the Monument. Notably, the Navajo ethnobotanist Arnold Clifford has documented the effects of human visitation on the Monument area, including the development of numerous trails, which has led to the destruction of fragile and essential BSCs; the damage to forbs; and the damage caused by ATVs and motorbikes to the terrain (although data collected on Cedar Mesa and surrounding areas indicate that the largest driver of motorized incursions on the Monument may be full-sized vehicles used for wood-cutting, rather than ATVs or motorbikes [Meyer 2020]) (see Appendix L). In that same vein, the Hopi are concerned about disturbance in BENM

having an effect on ancestral spirits. Visitation for Indigenous peoples to BENM is typically accompanied by prayers and offerings (see Appendix L).

Developed Recreation Sites

Developed recreation sites are areas that incorporate visitor use with roads, parking areas/trailheads, campgrounds, and other facilities that protect the resource and support recreation users in their pursuit of activities, experiences, and benefits. As a management tool, visitor infrastructure can minimize the effects of recreational activities on resources, concentrate use, and reduce visitor conflicts.

Staff contacts with visitors at the Monticello FO and in the field, as well as responses to the Fix et al. (2023) survey, indicate there is increasing public demand or expectations for BLM-developed campgrounds and interpretive sites, as well as a need to reduce damage from dispersed camping in heavily used areas. The presence of developed resources often leads to concentrated visitation. For instance, Indian Creek SRMA has four campgrounds. Indian Creek also has double the use of any of the other BLM RMAs and, according to the OFM survey, 70% of those visitors list camping as a primary activity. Demand for developed camping areas is expected to increase throughout the Planning Area due to the proliferation of RV and camper van rentals, which make these opportunities more accessible to a broader range of visitors. Developed recreation sites may help accomplish these goals; developed recreation sites relevant to BENM are listed in Table 3-129.

Table 3-129. Current Day Use Sites, Campgrounds, and Trailheads by Unit

RMA	Day Use Site/Multi-Purpose Site or Contact Station	Campground	Trailhead	Point of Interest
Beef Basin ERMA	Beef Basin Kiosk Farmhouse Interpretive Site			
Canyon Rims SRMA				Anticline Overlook Needles Overlook
Cedar Mesa SRMA	Slickhorn Kiosk (by County Road 245) Hole in the Rock Interpretation across from Natural Bridges Valley of the Gods North Kiosk Site Cigarette Springs Kiosk Site Lime Kiosk Site Snow Flat Kiosk Site Kane Gulch Ranger Station		Johns Canyon Staging Area Bullet Canyon Trailhead Sheiks Canyon Trailhead Collins Trailhead Fish And Owl Trailhead Government Trail Trailhead Todie Flat Trailhead Cigarette Springs Kiosk Site Lime Kiosk Site Snow Flat Kiosk Site Slickhorn Kiosk (by County Road B203)	
Dark Canyon ERMA			Fable Valley north Trailhead Fable Valley south Trailhead Sundance Trailhead	

RMA	Day Use Site/Multi-Purpose Site or Contact Station	Campground	Trailhead	Point of Interest
Indian Creek SRMA	Davis/Lavender Staging Area Lockhart Basin Turnoff Newspaper Rock Recreation Site North Cottonwood Creek Kiosk Site	Bridger Jack Mesa Dispersed Camping Creek Pasture Campground and Group Site Hamburger Rock Campground Indian Creek Falls Group Site site		
Indian Creek SRMA (est. 2020)	Donnelly Canyon Parking Area	Superbowl Campground Superbowl Group Site		Newspaper Rock
Monticello ERMA				Black Hole San Juan Three Kiva Pueblo
San Juan River SRMA	Sand Island Petroglyphs Sand Island Ranger Station, Boat Ramp Mexican Hat Boat Launch Site Clay Hills Boat Ramp Site Sand Island Recreation Site	Sand Island Campground and Group Sites		San Juan River
Shash Jáa SRMA (est. 2020)	Butler Wash South Kiosk Site Snow Flat Upper Kiosk Site San Juan Hill Interpretive Site River House Interpretive Site Arch Canyon Interpretive Site Mormon Trail Off Highway 95 Kiosk Site Texas Flat Road Kiosk Mule Canyon Village Salvation Knoll Kiosk Butler Wash North/Tracksite Kiosk Site	Comb Wash Recreation Site	Lower Fish Creek Trailhead North Mule Canyon Trailhead Moon House Trailhead South Mule Canyon Trailhead Butler Wash Interpretive Trail	House on Fire McLoyd Canyon-Moon House RMZ
White Canyon ERMA			Jacobs Chair ATV Trailhead Paiute Pass ATV Trailhead Soldier Crossing ATV Trailhead	

Source: BLM (2022).

Commercial, Competitive, and Organized Group Recreation

As authorized by the Federal Lands Recreation Enhancement Act, there are five types of use for which SRPs are required: 1) commercial, 2) competitive, 3) vending, 4) individual or group use in special areas, and 5) organized group activity and events. SRPs are issued to outfitters, guides, vendors, recreation clubs, and commercial competitive event organizers that provide recreation opportunities or services. The permits are issued to manage visitor use, protect natural and cultural resources, accommodate commercial recreational uses, and provide guided and organized recreation opportunities. The BLM issues SRPs or ISRPs for non-commercial use in certain special areas where a permit system for individual use would achieve management objectives.

Permitted access to lands with BENM is not new as recreation designations for the Primitive Areas in the Planning Area requiring ISRPs were published as early as 1970. Portions of the San Juan River have had allocated permits since 1973 (BLM 1976). The San Juan River, Grand Gulch Primitive Area and Dark Canyon Primitive Area were all identified as SRMAs where the authorized officer require permits for recreation uses in 1981 (BLM 1981). The San Juan and Cedar Mesa areas were expanded and additional fees were subsequently established through various plans (BLM 2001). The ISRP fee systems were most recently updated through the San Juan River Business Plan (BLM 2014b) and the 2019 Cedar Mesa Business Plan, which extended the fee area to include canyons of the Butler Wash Road (BLM 2019d).

Large non-commercial group activities could require an SRP, if necessary, to meet planned resource management objectives or resource conditions. If the group or activity does not warrant an SRP, a letter of agreement is often used. SRP activities often offer a specialized opportunity for the public to experience activities that they themselves do not have the skills, equipment, or resource knowledge to perform independently. SRPs also provide structured recreational, educational, and accessible opportunities for visitors to experience the scenic, natural, and cultural resources of BENM. Required permittee adherence to SRP stipulations and the presence of experienced guides maximizes protection of resources through consistent application of “Leave No Trace” and “Visit with Respect” principles.

Some recreation use can be estimated through recreation activities requiring special permits. Table 3-130 lists the numbers and types of active SRPs in 2022 (from RMIS data from the Monticello and Moab FOs), and Table 3-131 lists the numbers and types of ISRPs issued in 2021 (BLM Monticello FO Statistics Database [Haines 2022]).

Table 3-130. Current Special Recreation Permits

Recreation Activities	Current Permits
Camping	85
Day hiking	75
Backpacking	55
Rock climbing	34
Canyoneering	22
Boating	17
Hunting	17
Bicycling events/tours	16
OHV tours/events	7
Rock writing tours	4

Recreation Activities	Current Permits
Photography	3
Vehicle tours	3
Ballooning	2
Running events	2
Handcart trekking	1
Horseback riding	1
Other	1
Shuttle	1
Wilderness therapy	1

Source: Haines (2022).

Note: There are a total of 120 SRPs administered by the Monticello FO area of BENM and 26 SRPs administered by the Moab FO area of BENM. Some permits authorize multiple activities.

Table 3-131. 2021 Individual Special Recreation Permits

Recreation Activities	2021 Permits
Cedar Mesa day use permits	7,112
Cedar Mesa backpacking and Moon House permits	2,384
San Juan River permits	1,428

Source: Sparks (2022).

3.5.7.1.2. USDA Forest Service

The USDA Forest Service manages recreation using the ROS. The ROS framework is divided into six classes based on access, remoteness, social encounters, visitor impacts, visitor management, facilities and site management, and naturalness. The ROS classes, from most developed to least, are Urban, Rural, Roaded Modified, Roaded Natural, Semi-Primitive Non-Motorized, Semi-primitive Motorized, and Primitive (USDA Forest Service 1990). The assumption is that the recreation settings that are provided influence the experiences a visitor may have, along with the benefits they may accrue. In practice, providing a wide range of settings allows for a wide range of recreational experiences. BENM contains NFS lands managed by the USDA Forest Service. Recreational pursuits in the Manti-La Sal National Forest include scenic driving, hiking, backpacking, horseback riding, OHV riding, visiting cultural sites, camping, and hunting. Hunting is more common on the Manti-La Sal National Forest, where big game is more abundant than on BLM-administered lands.

Visitation and Visitor Experience

There is no visitor use data specific to NFS lands in the Planning Area, but total visitation to the Manti-La Sal National Forest (the forest) in 2021 was estimated as 957,500 visits (USDA Forest Service 2023). The recreation activities with the highest participation percentage were hiking/walking, OHV use, primitive camping, driving for pleasure, relaxing, hunting, viewing natural features, viewing wildlife, developed camping, and bicycling (USDA Forest Service 2023). New technology is fueling recreational activities that are changing outdoor recreation across the forest, including side-by-side OHVs, electric and fat tire mountain bikes, ski and track conversions for motorcycles, and over-snow OHVs. Social media and other web-based applications have highlighted and provided directions to sensitive areas and cultural sites on the forest that in the past were protected by their anonymity. Strategies for dealing with increased use to these areas are needed.

Notably, BENM contains the 45,000-acre Dark Canyon Wilderness, which provides primitive recreation opportunities. According to the 2016 National Visitor Use Monitoring (NVUM) data, which produces estimates of the volume of recreational visitation to national forests and grasslands, visitors to designated wilderness were 75% satisfied with access and services and 100% satisfied with feelings of safety. Crowding in designated wilderness was rated as 2/10 (with 1 being hardly anyone there and 10 being overcrowded) with raw USDA Forest Service solitude monitoring data indicating that less than 15 individuals were encountered on any given day on any of the trails in wilderness areas (Murdock 2022). Wilderness visitation was rated as low, and most visits to wilderness areas were for the purpose of recreation.

Although visitor use data have not been collected specifically for the NFS portion of the Planning Area, NVUM does occur on a forest-wide level every 5 years, providing the most relevant, reliable, and accurate data available on national forest visitation. NVUM data are collected using a random sampling method that yields statistically valid results at the national forest level; however, results for any single year or season may underrepresent or overrepresent some groups of visitors. Additionally, applying these data at smaller scales than the forest is particularly challenging, especially at a site level. Average daily traffic counts from counters placed on selected forest roads also provide more focused insight to forest visitation. In 2019, 6,707 vehicles drove in and out of the Monument via the route near NBNM; 2,499 vehicles drove in and out of the Monument via South Cottonwood Wash; and 6,971 vehicles drove in and out of the Monument via South Elk Ridge. Data collection over 9 years show weekday and weekend average daily traffic has experienced modest growth across the forest.

In the 2016 forest-wide NVUM report (which provides data for the entire Manti-La Sal National Forest), 95% of visitors were satisfied with developed facilities, 83.9% were satisfied with access, 85.7% were satisfied with services, and 95.2% were satisfied with feelings of safety in developed recreation areas. Visitors ranked crowdedness for developed day use sites as 4.6/10 and for developed overnight use sites as 4.8/10; 84.4% reported being very satisfied with their overall recreation experience (USDA Forest Service 2016). The 2021 NVUM data show that 83.5% of visitors were very satisfied and 5.10% were somewhat satisfied with their visit to the Manti-La Sal National Forest (USDA Forest Service 2023).

Overall, visitation is increasing on the NFS lands part of the Monument. Road count numbers for BENM indicate that 6,971 vehicles visited the NFS lands in 2019, and over 14,000 visited in 2020.²⁵ There are several access road counters installed within the current boundaries of the NFS lands. Once such counter is on the access road to Doll House Ruin. The counter was installed in July 2017. The counter recorded 194 visits in 2017, compared to 467 visits recorded in 2020 and 226 visits in 2022. The road counter on the White Rim OHV route also showed an increase in visitation from 212 in 2017 to 1,096 in 2022, and another on Cream Pots road showed 114 visits in 2017 compared to 151 in 2022. Similarly, the Peavine Corridor Scorup Cabin Site counter data indicate that visitation increased from 128 visitors in 2017 to 296 visitors in 2020, and the Upper Peavine Corridor increased from 332 visits in 2017 to 645 in 2020 to 347 in 2022 (the increased use in 2020 may be due to a general increase in outdoor recreation during the COVID-19 pandemic). Assuming a portion of the vehicles were carrying more than one person, these values indicate a significant increase in visitation to the Scorup Cabin site from the years before the counter was installed. Additionally, USDA Forest Service data indicate a tenfold increase in visits to the Lewis Lodge site in 2020, with approximately 500 individuals visiting the site.

²⁵ Use numbers for outdoor recreation on public lands were impacted nationwide by the COVID-19 pandemic.

Dispersed Recreation

Dispersed recreation occurs outside of formal recreational facilities, mostly along or adjacent to roads and includes activities such as driving for pleasure, camping, hiking or mechanized trail use, hunting, fishing, and wilderness travel. Factors such as population growth, available leisure time, and energy costs affect this use. As dispersed recreation activities on the forest increase, use will need to be controlled or limited in certain areas to reduce resource damage and/or conflict with other resource uses while maintaining the desired opportunities and quality of the recreation experience.

Since the adoption of the 1986 Manti-La Sal LRMP, recreation activities on the forest have changed, especially related to motorized recreation. OHV use and availability, coupled with technological advances, have allowed visitors to travel to places within the Planning Area that had previously been difficult to access. Providing for non-motorized activities separated from motorized uses has become increasingly difficult. Along with the increase in the number of vehicles, many trailers and RVs are much longer and, with slide outs, much wider than older models. The popularity of dispersed camping, coupled with the size of RVs, has impacted natural resources at dispersed campsites. Based on state and national trends suggesting a general increase in outdoor recreation (Cordell 2012), it is expected that recreation use will continue to increase in the Monument area.

Developed Recreation Sites

Developed recreation sites are areas that incorporate visitor use with infrastructure such as roads, picnic tables, parking areas, and facilities that protect the resource and support recreation users in their pursuit of activities, experiences, and benefits. Visitor infrastructure is a management tool that can minimize the effects of recreational activities on resources, concentrate use, and reduce visitor conflicts. The NFS portion of the Planning Area contains a limited amount of developed recreation sites. A network of roads and trails access many parts of NFS lands and beyond onto BLM-administered lands. There are developed trailheads, minimal signage, and several restroom facilities; however, there are no developed campgrounds (USDA Forest Service 1986). The NFS lands within the Monument offers more dispersed and undeveloped recreational experiences compared to developed opportunities.

Commercial, Competitive, and Organized Group Recreation

The USDA Forest Service requires SUPs for all commercial uses and some non-commercial group uses. SUPs are issued for a variety of activities such as outfitter and guide services, recreation events, filming and photography, outdoor education, and organization camps. The permits are issued to manage visitor use; protect natural, cultural, and social resources; and help provide extraordinary recreational experiences to the public. The USDA Forest Service issues non-commercial group use permits in certain instances where group sizes are 75 persons or larger outside developed campgrounds if the permit is necessary to meet resource management objectives and conditions. SUPs can offer specialized and often inaccessible recreational opportunities to the general public without the skills, equipment, or resource knowledge to recreate independently and safely. Commercial recreational use can be tracked through SUP use. New SUP demand is increasing in the Planning Area. Table 3-132 lists the numbers and types of active SUPs in 2022.

Table 3-132. Active Special Use Permits in the Planning Area in 2022

Recreation Activities	Current Permits
Hunting	12
Bikepacking (multiday)	6
Overnight backpacking	6
Jeep/van/OHV tours/events	5
Motorcycle tours	3
Day hiking	2
Non-commercial use	2
Horseback riding	1
Mountain biking	1
Rock climbing	1
Running events	1

Source: Lowe (2022).

3.5.7.2. ENVIRONMENTAL CONSEQUENCES

3.5.7.2.1. Issues

- How would proposed management affect the agencies' ability to provide recreation objectives, RSCs, and ROS classes?

3.5.7.2.2. Impacts Common to All Alternatives

Recreation, both dispersed and developed, impacts the condition of Monument resources and objects and must be considered in the context of all planning elements (see Appendix L). Recreational activities can impact the natural resources, including vegetation, wildlife, water, and soil and can potentially alter the structure and function of ecosystems. Other impacts of recreation use include damage to ancestral sites and environmental pollution. Such disturbance can impact wildlife and change the experience for those visiting the Monument and degrading the values that Tribal Nations have long associated with the land. The amount, distribution, type, and concentration of recreational use also influences the degree to which recreation impacts the natural components of a landscape (Monz 2021). Appropriate management to influence appropriate visitor behavior can minimize these impacts. Recreation has impacts to and implications for the condition of other Monument resources and objects and must be considered in relation to all Monument elements to which it is connected. Unmanaged recreation and tourism threatens the objects of BENM; however, visitation can be a beneficial method of public cultural education, if appropriate and culturally sensitive modes of thinking and visitation can be effectively communicated to visitors (see Appendix L). Visitor behavior can be successfully modified via restrictions and educational programs such as teaching minimum-impact practices (Monz 2021). The agencies would collaborate with the BEC to protect BENM objects in a manner that respects traditional uses, values, and perspectives of Tribal Nations. The agencies would also seek input from the MAC when developing RAMPs.

Resource management actions that would limit or prohibit surface disturbance to protect Monument resources and objects would likely benefit recreation visitors seeking more remote RSCs and ROS classes. Under all alternatives, unused dispersed campsites would be restored in collaboration with BEC. Such management would prevent recreationists from accessing redundant

or social trails as well as rarely used dispersed campsites; this would preserve the natural character of BENM by reducing evidence of recreation use on the landscape outside of main routes and allowing vegetation and soils to recover from disturbance. Existing access points, trails, and climbing routes that do not harm BENM objects would continue to be allowed. Such management would ensure that recreationists would have access to recreational resources. Site-specific impacts from recreation may result in climbing route closures and access trails or staging areas being closed and/or rerouted. These closures would reduce the availability of recreational opportunities and would redirect recreationists to open areas of BENM.

Under all alternatives, BLM SRPs and USDA Forest Service SUPs would be used to conserve recreation objectives; manage visitor use; protect recreational and natural resources; and provide for visitor health and safety while protecting BENM objects. ISRPs or permit systems would similarly be used for the public in areas of the Monument identified in Alternatives A through E. Using permits in this way could place some restrictions on the actions of permit holders (SRP and ISRP) but would likely be to the benefit of all visitors by preserving the natural character of BENM and prioritizing visitor safety. BENM would also be managed to maintain natural quiet wherever possible, which could place restrictions on noisier visitor activities (e.g., loud music, noise from motorized recreation) but would benefit most visitors by preserving the natural character of the Monument. Agencies would also collaborate with the BEC when creating or updating recreation permits, which would involve creating stipulations to educate users about BENM rules and regulations and limiting use levels where necessary. Such management would ensure that permit holders are prepared to recreate responsibly on BENM.

Notably, ROS classifications on NFS lands would be the same under all alternatives, as shown in Table 3-133. As ROS management would not change, OHV access and non-motorized access on the NFS lands of BENM would remain constant.

Table 3-133. USDA Forest Service Recreation Opportunity Spectrum Classes under All Alternatives

ROS Classes	Acres under All Alternatives
Primitive	48,440
Roaded Natural	25,700
Semi-Primitive Motorized	86,163
Semi-Primitive Non-Motorized	128,752
Total	289,055

The BLM manages units of land as open, limited, or closed to OHV use. “OHV open” areas do not regulate cross-country OHV travel (BLM 2016b). “OHV limited” areas are managed with one or more defined limitations on vehicular uses or users that may be spatial, temporal, and/or directed toward specific vehicular users (BLM 2016b). The standard limitation is limiting vehicular use to designated routes. “OHV closed” areas are managed as closed to all OHV use to protect resources, promote visitor safety, or reduce user conflicts (BLM 2016b). Cross-country OHV travel is prohibited under all action alternatives. For this reason, there are no areas designated as OHV open in BENM. Recreational motorized or mechanized use is only permitted on designated roads and trails. Additionally, all action alternatives designate more acres as OHV closed on NFS lands than Alternative A (Table 3-134). Although it would limit the recreational potential for motorized and mechanized users, such management would likely also limit conflicts between user groups on the landscape and would also preserve natural Monument characteristics on the landscape by reducing dust, noise, and erosion impacts to non-motorized and non-mechanized areas of BENM. This would allow for non-motorized users’ recreational use but would limit OHV users’ ability to engage in

motorized recreation in certain areas. It could also impact how users access portions of the Planning Area. OHV limited areas would serve as a middle ground by supporting all types of user groups. Implementation-level decisions regarding travel management for specific routes would be deferred to subsequent implementation-level planning. Motorized use areas may be closed seasonally to provide for resource rest as needed, temporarily impacting motorized user access to certain areas of BENM.

Motorized watercraft (which are permitted on the San Juan River) may introduce noise and gas pollution, whereas watercraft may increase the threat of spreading nonnative species. Additionally, recreationists may damage springs or other water sources (see Appendix L). Use of trails by ATVs, bikes, and horses has caused damage to ancestral sites, plants, and sensitive soils. ATV use increases the rate of erosion, which can, increase ambient dust levels, sedimentation of waterways, and compacted soil. Indeed, mechanized and motorized use can increase potential disturbance compared to non-mechanized or non-motorized activities (Monz 2021). ATV use can also spread nonnative species in disturbed areas, which may lead to habitat degradation. Expanded ATV access also expands access to remote archaeological sites, where the potential for vandalism and theft of artifacts is increased. The Diné (Navajo) have expressed concerns about the “looting and destruction of traditional and ancestral sites,” and there is evidence of such damage to cultural sites such as rock writings on the Monument (McLeod 2022) (see Appendix L). Additionally, new technology is fueling recreational activities including side-by-side OHVs, electric and fat tire mountain bikes, ski and track conversions for motorcycles, and over-snow OHVs. The unanticipated impacts of these new uses can often be difficult for managers to assess, but general OHV management can help prevent impacts from some of these uses to Monument resources.

OHV users could be impacted due to limitations or closures in LWC managed to conserve wilderness characteristics under the action alternatives, impacting the ability of specialized user groups to recreate in LWC and redirecting such users to areas where OHV travel is allowed; however, management aimed at preserving LWC would benefit recreation, especially for remote recreation users. Characteristics such as naturalness, solitude, and remote recreational opportunities would be preserved due to closures imposed on surface-disturbing activities and other uses.

Like LWC, ACECs would close areas to OHV use or limit OHV and mechanized routes, limiting the ability of such user groups to recreate in ACECs. In ACECs, camping or recreational use may be restricted to protect ACEC relevant and important values such as cultural sites. Such management, while limiting access to relevant and important values, would preserve those values far into the future by preventing incidental impacts from visitors interacting with ACEC resources.

WSR designations could also lead the BLM to manage such areas as closed to OHV use or motorized boating use, and WSAs would also be managed as closed to OHV use. This would both limit recreational opportunities for motorized users while preserving the naturalness of recreation experiences for non-motorized users. Limitations may be implemented on camping in WSAs. This would limit recreational opportunities in such areas and redirect visitors to open areas of the Monument. SRPs for certain uses would also be prohibited in WSAs, limiting the ability for competitive events, vending, and OHV/motorized uses to occur and redirecting these users to other areas.

Motorized aircraft would be managed as OHVs when on or immediately over agency-managed lands or waters, meaning that such motorized aircraft use would be limited to designated routes in OHV limited areas and would be unavailable in OHV closed areas.

Cultural resource management actions are intended to protect Monument objects listed in Proclamation 10285 and areas of cultural significance. Therefore, areas of BENM could be subject to recreational closures as deemed necessary by the agencies and the BEC. For instance, the agencies would collaborate with the BEC to identify temporary area closures as needed to ensure ceremonial activities and gatherings could be conducted in private. Additionally, to limit impacts from recreation on cultural resources, the agencies would coordinate with the BEC to determine proper strategies to address such impacts, including educating visitors about Indigenous people's connections to BENM, teaching etiquette to avoid impacts to cultural resources, and, if necessary, controlling or limiting levels of recreational visitation. Such limitations or controls on visitation would impact the ability of some visitors to recreate and could prevent visitation to some sites on the Monument, potentially detracting from BENM's recreational potential; however, such controls may have beneficial impacts to some visitors' experiences by reducing crowds and mitigating evidence of visitation in some areas of BENM. Additionally, cultural resource sites could be closed when their condition is at risk or when there is a safety hazard. This would limit recreational opportunities in such areas and redirect visitors to open areas of the Monument.

Unauthorized use of pack animals and domestic pets would be prohibited in cultural resource areas except historic roads and trails. This could impact the ability of recreational visitors with pets or pack animals to experience these sites but would likely preserve their condition and integrity for other visitors.

Traditional Indigenous Knowledge and Indigenous ways of knowing would be given equal consideration with the Western scientific paradigm when designing the educational materials utilized on BENM. Collaboration between the agencies and the BEC would expand the educational materials available to visitors and provide a more comprehensive picture of the history of BENM. These new educational materials would present a service to visitors wishing to learn more about the history and significance of BENM and would also teach visitors to use proper respect and etiquette when interacting with the landscape, benefiting visitors of all backgrounds who wish to experience BENM.

Additionally, trails in Shay Canyon could be closed or rerouted if impacts to significant paleontological resources from recreational use are persistently indicated through monitoring and could also be closed seasonally to allow for resource rest. In areas where significant paleontological resources are detected, trails and access points could be closed or rerouted (Alternative A) and other appropriate actions would be taken to avoid impacts to such resources under all action alternatives. This could impact the ability of visitors to access or interact with paleontological BENM resources but would benefit users in the long term by preserving such resources in perpetuity.

Management actions for soil resources intended to reduce erosion, stream sedimentation, and protect BSCs could benefit some recreational users by reducing evidence of use and improving the natural characteristics of BENM. The agencies would work with the BEC to determine protections to BSCs, which may close some areas to visitation during drought periods or ceremonially or traditionally significant times of year, limiting off-trail recreational opportunities in parts of the Monument. Similarly, management actions aimed at enhancing landscape/riparian/watershed function and maintaining the desired mix of vegetation types and structural stages would benefit recreational experiences by improving the natural character of riparian and wetland areas. Limitations to dispersed recreation use in riparian areas or areas where water quality conditions are being impacted by recreational uses under all action alternatives would reduce recreational opportunities in BENM.

Limitations on camping, such as closing areas to dispersed camping or restricting camping to designated areas through implementation-level planning, could impact the ability of some visitors to camp within BENM and may redirect visitors to areas open to camping, contributing to crowding in some cases. Limiting campfires to certain areas or containment (e.g., metal fire rings) in Valley of the Gods ACEC and SRMA could limit recreationists' opportunities when dispersed camping and redirect visitors to areas where campfires are allowed. Additionally, if permitted activities are causing riparian areas to be functioning-at-risk or nonfunctioning, such activities could be restricted or the area may be closed. This would limit recreational opportunities in such areas and redirect visitors to open areas of the Monument.

Vegetation management under all alternatives would manage culturally important plants to protect them from discretionary actions like recreation. Such protection could impact recreational access in various capacities. For instance, vegetative treatments could close areas to recreation when restoration or other work is underway. This would limit recreational opportunities in such areas and redirect visitors to open areas of the Monument. Additionally, areas could be seasonally closed to seed gathering. Such management could impact the ability of recreationists to access certain areas of BENM and to engage in private seed collecting activities. Additionally, wood product harvest would be excluded from all developed recreation areas. This would likely benefit recreationists by preserving the natural character of the surrounding environment in areas intended for the enjoyment of visitors and recreationists but could detract from the experience of recreationists in more remote areas of the Monument, as wood gathering activities would be redirected to such areas, potentially leading to disturbance and altered natural conditions. Harvest of live firewood may also be damaging to wildlife resources and the values of the Tribes (see Appendix L), and preventative management would preclude these concerns.

Management decisions to protect habitat connectivity through vegetation management, conserving habitat connectivity, and prioritizing special status species movements would restore the natural characteristics of the landscape and improve the potential for wildlife viewing. Such management would benefit visitors seeking more remote recreational experiences. Protection of special status species could warrant seasonal or other area closures, restricting recreational activities on certain portions of BENM and impacting recreational potentials. Seasonal restrictions on activities for raptor nesting and foraging habitat would likely cause temporary annual closures to recreational activities in certain areas of BENM, including closures of trails and climbing routes where active nests are located. Under all action alternatives, seasonal visitation closures would be implemented to protect nesting raptors, provide natural resource rest, or support traditional uses. Such management would temporarily reduce the amount of climbing available to recreationists but would protect the natural quality of the recreation setting by allowing for resource rest and wildlife habitat.

Activities impacting bat roosting, hibernating, and breeding could also be seasonally restricted under all action alternatives. Seasonal restrictions on use in MSO PACs for both commercial and private users, including group size limits, overnight use limitations, and requiring permits, would also limit recreational opportunities but may also benefit some users by reducing crowding and evidence of use from other users. All such management would limit recreational opportunities in habitat areas and redirect visitors to open areas of the Monument, potentially resulting in crowding in areas open to recreation during certain times of the year.

Closures or limitation of use in certain habitat areas to recreation use or to certain uses, including OHV use, and commercial filming, could be implemented on a seasonal basis to manage crucial big game habitat. Such closures could limit the recreational opportunities for certain user groups but could improve the natural conditions and wildlife viewing opportunities for other users.

All action alternatives have more ROW avoidance and exclusion areas than Alternative A. Similarly, NFS lands would be an avoidance area under all action alternatives, preserving remote recreational opportunities on BENM and benefiting those visitors who wish to experience the natural setting characteristics of the Monument.

Grazing would be excluded from developed recreation facilities, including campgrounds, trailheads, and cultural sites designated as Public Use (Developed) and may be seasonally limited for the purpose of resource rest. Such management would reduce conflicts between livestock and recreational uses and would preserve resources integral to recreational experiences. Notably, all action alternatives would manage livestock to avoid conflict with recreational users to the extent possible, benefiting recreation users by reducing potentially dangerous run-ins with livestock or impacts to recreational resources (such as erosion or visual impacts from forage consumption on or near trails). Additionally, the action alternatives allocate thousands of acres as unavailable/not suitable for livestock grazing. Removing livestock presence from areas of BENM would benefit users who have a negative view of impacts from livestock use, including manure on trails and in campsite areas, consumption of wild forage, and evidence of soil compaction and erosion.

Fire management such as fuels treatments could close areas of BENM to visitation, temporarily limiting the scope of potential recreational activities available to visitors; however, fire management would benefit recreational visitors by sustaining community infrastructure and prioritizing human health and safety. Likewise, impacts from health and safety resource management would mainly benefit visitors and recreationists. Under all alternatives, search and rescue operations would be prioritized as necessary to provide for the protection and health and safety of public lands users to the extent possible.

Visual resources, night skies, and soundscapes management would likely benefit recreational users and other BENM visitors. Landscape reclamation, vegetation restoration, and management to benefit night skies and soundscapes would enhance the natural quality of recreation settings on BENM under all alternatives; however, VRM restrictions could potentially limit the amount of recreation infrastructure that the agencies can provide, reducing developed recreational resources available to recreational users in some areas of the Monument.

Alternatives A through E contain a wide variety of potential implementation actions related to management. Generally, these tools are designed to manage impacts to both natural and cultural resources while balancing recreational access in BENM. These actions can be management related (e.g., services offered, roads, etc.) or administrative related (e.g., allocation systems, permits). More restrictive actions would generally benefit individuals or groups that seek primitive or remote types of recreational settings; for example, OHV use may be limited with certain restrictions. Other types of potential restrictions include closures of existing dispersed camping areas, limits on UAS, group size limits, and requiring permitted access in certain areas.

3.5.7.2.3. Impacts under Alternative A

Alternative A represents current management actions enacted under the plans that manage areas covered by the Planning Area: the 2020 ROD/MMPs, the 2008 Monticello RMP, the 2008 Moab RMP, and the 1986 Manti-La Sal LRMP. Of all alternatives, Alternative A provides the fewest regulations and limits on recreation. This would benefit existing recreational users by keeping the majority of recreational opportunities open to the greatest extent possible.

Alternative A would also strive to locate recreational activities near population centers and highway corridors and would provide facilities for recreationists where there are concentrations of users. Such management would direct recreational users to more concentrated areas, potentially

resulting in crowding, while preserving the naturalness of more remote areas of the Monument and making more recreation possible in such areas. Under Alternative A, hiking paths and trails would be developed if they are consistent with maintaining BENM, and redundant hiking trails and social trails would be closed and reclaimed. Alternative A would also benefit users by ensuring that they are provided with adequate facilities on BENM. Land use management decisions potentially impacting recreation resources include those under all action alternatives that restrict commercial or other filming activity. Such decisions would preserve remote recreational experiences, as would limitations on aircraft use associated with commercial filming.

Under Alternative A, in the areas covered by the 2020 ROD/MMPs, casual collecting of petrified wood and fossils would not be allowed in BENM, thereby maintaining the recreational values of the Monument setting and preserving paleontological resources for the enjoyment of future visitors. The prohibition of casual fossil collection and casting would impact the opportunities of recreational collectors but would benefit other visitors by leaving such resources intact for future recreationists to experience. Additionally, in the areas covered by the 2020 ROD/MMPs, camping would be prohibited in cultural resource sites. Outside of the areas covered by the 2020 ROD/MMPs, dispersed camping would be allowed where not specifically restricted, providing recreational opportunities for dispersed camping.

Under Alternative A, pets would be required to be kept under control at all times and would be prohibited at alcoves, rock writing sites, or archaeological sites in areas covered by the 2020 ROD/MMPs. Under the 2008 Monticello RMP, pets would not be allowed in certain canyon systems in the Cedar Mesa SRMA. Such management would place greater responsibility on pet owners recreating in the Monument and could limit where such visitors can recreate when accompanied by pets; however, this management would likely reduce visitor conflict, promote safety on BENM, and protect resources from incidental impacts from pets.

Under Alternative A, SRPs and SUPs would be used to manage various types of recreation associated with activities including commercial uses, competitive uses, and recreation in special areas. Permits systems for public use would be in place, or put in place as necessary, for areas of Shash Jáa SRMA, Cedar Mesa SRMA, McLoyd Canyon-Moon House RMZ, San Juan River SRMA, Dark Canyon SRMA, White Canyon SRMA, Arch Canyon RMZ (NFS lands). Impacts of SRP/SUP and permit systems would be similar to those described in Section 3.5.7.2.3.

Impacts from Off-Highway Vehicle Travel

Alternative A would designate 436,075 acres as OHV closed and 928,070 acres as OHV limited. Alternative A closes the fewest acres to OHV use and provides the most OHV limited acreage (see Table 3-134). To better protect Monument objects, there are no OHV open areas on BENM; therefore, Alternative A, which closes the fewest acres to OHV use and has the most OHV limited acres of all alternatives, would provide the most OHV recreation opportunities compared to the other alternatives. Such management could lead to increased conflicts between user groups and could impact the experiences of non-motorized users given the character of their surroundings.

Table 3-134. Off-Highway Vehicle Designations on BLM-Administered and National Forest System Lands under All Alternatives

Travel and Transportation Management	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
BLM OHV closed	389,645	389,645	487,048	805,932	392,989
BLM OHV limited	685,403	685,403	588,000	269,117	682,059
BLM OHV open	0	0	0	0	0

Travel and Transportation Management	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
NFS OHV closed	46,430	176,982	176,982	176,982	176,982
NFS OHV limited	242,677	112,122	112,122	112,122	112,122
Total	1,364,155	1,364,152	1,364,152	1,364,153	1,364,152

Impacts from Recreational Shooting

Recreational shooting activities would be generally allowed under Alternative A except at campgrounds or developed recreation sites, rock writing sites, and structural cultural sites. This management would continue to result in potential conflicts between user groups over recreational shooting and could lead to health and safety issues as visitation to the Monument increases.

Impacts from Designation of Recreation Management Areas

Under Alternative A, the BLM would continue to manage the existing 10 SRMAs (534,617 acres) and two ERMAs (500,188 acres within BENM), and a total of 112,508 acres would continue to be managed as RMZs. These areas would be managed using management listed in the 2020 ROD/MMPs (BLM and USDA Forest Service 2020), the 2008 Moab RMP, and the 2008 Monticello RMP. This management framework identifies targeted recreational activities and outcomes and management actions prescribed to each RMA. Alternative A designates the most acres of SRMAs, allowing the BLM to manage and protect specific recreational opportunities and experiences on BENM. Table 3-135 details the targeted recreational activities and associated total acreages under each alternative.

Table 3-135. Targeted Recreational Activities by Alternative

Targeted Activities	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Backpacking	Acres: 38,220	Acres: 535,367	Acres: 535,367	Acres: 374,066	N/A
	Canyon Rims SRMA, Dark Canyon SRMA	Cedar Mesa SRMA, Cedar Mesa Backpacking RMZ, Dark Canyon ERMA, Dark Canyon Backpacking RMZ, White Canyon ERMA, White Canyon Canyoneering RMZ, Beef Basin ERMA	Cedar Mesa SRMA, Cedar Mesa Backpacking RMZ, Dark Canyon ERMA, Dark Canyon Backpacking RMZ, White Canyon ERMA, White Canyon Canyoneering RMZ, Beef Basin ERMA	Cedar Mesa MA, Cedar Mesa Backpacking MZ, Dark Canyon MA, White Canyon MA	
Camping (Developed)	Acres: 95,574	Acres: 424,862	Acres: 424,862	Acres: 420,659	N/A
	Indian Creek SRMA, Canyon Rims SRMA	Indian Creek SRMA, Cedar Mesa SRMA, San Juan River SRMA, Sand Island RMZ, Goosenecks RMZ	Indian Creek SRMA, Cedar Mesa SRMA, San Juan River SRMA, Sand Island RMZ, Goosenecks RMZ	Indian Creek MA, Cedar Mesa MA, San Juan River MA, Sand Island MZ	

Targeted Activities	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Camping (Dispersed)	Acres: 90,163	Acres: 293,616	Acres: 293,616	Acres: 93,483	
	Indian Creek SRMA	Indian Creek SRMA, Canyon Rims SRMA, Dark Canyon ERMA, White Canyon ERMA, Valley of the Gods ERMA, Goosenecks RMZ	Indian Creek SRMA, Canyon Rims SRMA, Dark Canyon ERMA, White Canyon ERMA, Valley of the Gods ERMA, Goosenecks RMZ	Indian Creek MA, Canyon Rims MA, Dark Canyon MA	
Canyoneering	Acres: 2,825	Acres: 124,827	Acres: 124,827	Acres: 7,222	
	White Canyon SRMA	White Canyon ERMA, White Canyon Canyoneering RMZ	White Canyon ERMA, White Canyon Canyoneering RMZ	White Canyon MA	N/A
Climbing	Acres: 90,163	Acres: 74,783	Acres: 74,783	Acres: 67,267	
	Indian Creek SRMA	Indian Creek SRMA	Indian Creek SRMA	Indian Creek MA	N/A
Cultural site visitation	Acres: 516,446	Acres: 449,849	Acres: 449,849	Acres: 420,659	
	Indian Creek SRMA, Shash Jáa SRMA, Cedar Mesa SRMA, Tank Bench SRMA, Comb Ridge RMZ	Indian Creek SRMA, Cedar Mesa SRMA, Comb Ridge RMZ, Cedar Mesa Backpacking RMZ, Arch Canyon RMZ, Moon House RMZ, San Juan River SRMA, Sand Island RMZ, San Juan Hill RMZ, Beef Basin ERMA	Indian Creek SRMA, Cedar Mesa SRMA, Comb Ridge RMZ, Cedar Mesa Backpacking RMZ, Arch Canyon RMZ, Moon House RMZ, San Juan River SRMA, Sand Island RMZ, San Juan Hill RMZ, Beef Basin ERMA	Indian Creek MA, Cedar Mesa MA, Cedar Mesa Backpacking MZ, Moon House MZ, San Juan River MA, Sand Island MZ	N/A
Heritage Tourism		Acres: 1,717	Acres: 1,717		
		San Juan Hill RMZ	San Juan Hill RMZ		N/A
Hiking	Acres: 7,411	Acres: 344,628	Acres: 344,628	Acres: 348,042	
	Canyon Rims SRMA	Cedar Mesa SRMA, Cedar Mesa Backpacking RMZ, Arch Canyon RMZ	Cedar Mesa SRMA, Cedar Mesa Backpacking RMZ, Arch Canyon RMZ	Cedar Mesa MA, Cedar Mesa Backpacking MZ	N/A
Mountain Biking	Acres: 7,411				
	Canyon Rims SRMA				N/A
OHV Opportunities	Acres: 95,574	Acres: 153,254	Acres: 153,254		
	Indian Creek SRMA, Canyon Rims SRMA	Arch Canyon RMZ, White Canyon ERMA, Beef Basin ERMA	Arch Canyon RMZ, White Canyon ERMA, Beef Basin ERMA		N/A
River Boating	Acres: 5,643	Acres: 5,355	Acres: 5,355	Acres: 5,350	
	San Juan River SRMA, San Juan Hill RMZ	San Juan River SRMA, Sand Island RMZ	San Juan River SRMA, Sand Island RMZ	San Juan River MA, Sand Island MZ	N/A
Scenic Driving	Acres: 7,411	Acres: 390,391	Acres: 390,391	Acres: 382,431	
	Canyon Rims SRMA	Cedar Mesa SRMA, Valley of the Gods ERMA	Cedar Mesa SRMA, Valley of the Gods ERMA	Cedar Mesa MA, Valley of the Gods MA	

Targeted Activities	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Visiting Scenic Overlooks	Acres: 423,663	Acres: 7,414	Acres: 7,414	Acres: 7,414	
	Indian Creek SRMA, Canyon Rims SRMA, Cedar Mesa SRMA	Canyon Rims SRMA	Canyon Rims SRMA	Canyon Rims MA	N/A
Visitor education (including etiquette at cultural sites)	Acres: 433,693	Acres: 14,184	Acres: 14,184	Acres: 10,840	
	Shash Jáa SRMA, Canyon Rims SRMA, Cedar Mesa SRMA, Tank Bench SRMA	Indian Creek Corridor RMZ, Trail of the Ancients RMZ, Arch Canyon RMZ, Moon House RMZ	Indian Creek Corridor RMZ, Trail of the Ancients RMZ, Arch Canyon RMZ, Moon House RMZ	Indian Creek Corridor MZ, Trail of the Ancients MZ, Moon House MZ	N/A

3.5.7.2.4. Impacts under Alternative B

Alternative B would manage via limiting or restricting public use as little as possible without compromising the protection of BENM objects. Similar to Alternative A, Alternative B would provide facilities for anticipated use in areas with a concentration of recreational users. Alternative B would also provide the most on-site interpretation/educational materials. Alternative B outlines an extensive list of areas where recreation sites would be developed, maintained, or improved, to the benefit of recreationists who use these facilities.

Under Alternative B, as under Alternative A, existing developed recreational facilities would be maintained and new facilities developed to enhance visitor experiences, address visitation impacts, and protect BENM objects. Such closures would limit recreational access to such areas of BENM and potentially redirect visitors to open areas of the Monument. Alternative B permits dispersed camping, although closures could be implemented seasonally as impacts at dispersed campsites warrant. This would inhibit recreational users from camping in dispersed areas and could result in limited campsite availability in other camping areas that remain open. Dispersed camping would also be limited in or near riparian areas and water sources if impacts are detected, and camping in non-designated sites would not be allowed near springs and water improvements. Under Alternative B, no visitors would be allowed into the interior rooms of cultural sites except in structures that are specifically identified as open to entry. Although this could restrict the ability of some visitors to experience these cultural resources, visitors would ultimately benefit from such management as it would prolong the preservation of such resources and sites. Under Alternative B, redundant hiking trails and social trails would be closed when new hiking trails are designated, unless the redundant and social trails are consistent with the protection of BENM objects. This may provide for more trails than under Alternative A, which would close these redundant and social trails.

Under Alternative B, filming would only be prohibited in designated wilderness and in USDA Forest Service–recommended wilderness and would be limited in areas with sensitive natural or cultural resources. The use of aircraft for filming would only be allowed for up to 2 days in areas of high recreational use and would only be allowed within 0.5 mile of designated campgrounds during low-use times. Such decisions would preserve remote recreational experiences and ensure that natural settings are not adversely impacted for long periods of time by filming operations.

Agencies would collaborate with the BEC to provide for the protection of paleontological resources and the protection of BENM objects while providing public access to those resources for scientific

education and study, and casting would be by permit only. Controls on casual fossil collection would impact the opportunities of recreational collectors but would benefit other visitors by leaving such resources intact for future recreationists to experience. Camping would be prohibited within cultural resource sites under Alternative B, providing similar protection to cultural resources as discussed in Alternative A, but across the entire Monument.

Under Alternative B, pet restrictions include prohibition in certain RMAs and RMZs and requirements of being under voice or leash control. Additionally, pets must not harass or harm wildlife, stock or cattle, or visitors and their pets. Pets are prohibited from swimming in potholes and springs, and pet waste disposal requirements are identical to human waste disposal requirements. Impacts to recreationists from pet restrictions would be similar to those described under Alternative A, but to a larger magnitude.

Under Alternative B, SRPs and SUPs would be used to manage various types of recreation associated with activities including commercial uses, competitive uses, and recreation in special areas. SRPs and SUPs would also be used to provide educational opportunities for visitors about BENM, with materials developed in conjunction with the BEC. All SUPs and SRPs would be consistent with the protection of BENM objects. Such management would enrich the educational opportunities provided to SUP and SRP users on the Monument. Alternative B also closes 617,625 acres of BENM to competitive mechanized or motorized activities, restricting where such user groups could host such activities but potentially reducing user group conflict and creating more non-motorized or non-competitive motorized opportunities. Overall, however, impacts to existing competitive motorized or competitive mechanized events would likely be limited. Permits systems for public use would be in place, or put in place as necessary, for areas of Cedar Mesa RMZ, Moon House RMZ, San Juan River SRMA, Dark Canyon SRMA. Impacts of permit systems on recreation opportunities would be similar to those described in Section 3.5.7.2.3.

Impacts from Off-Highway Vehicle Travel

Alternative B would designate 797,525 acres as OHV limited and 566,627 acres as OHV closed. Travel planning tied to those designations would occur under future travel and transportation management planning. This alternative would close more areas to OHV use than Alternative A while also providing fewer acres of OHV limited areas (there are no OHV open areas on BENM); however, of all the action alternatives, Alternative B provides the most acreage of OHV limited and closes the fewest acres to OHV use. This would benefit OHV users while also raising the issue of user group conflicts and potentially damaging recreational settings in OHV limited areas by increasing noise and dust levels. Motorized aircraft and UAS takeoff and landing would be limited to OHV limited areas, the Bluff Airport, the Fry Canyon Airstrip, and to routes identified via implementation-level planning, limiting the potential for using motorized aircraft and UAS on the Monument. Such management would limit noise pollution and preserve backcountry and remote social RSCs in areas where those settings are desired, likely improving the experience of non-motorized, non-UAS recreational users.

Impacts from Recreational Shooting

Recreational shooting activities would be generally allowed under Alternative B except at campgrounds, developed recreation sites, rock writing sites, structural cultural sites, and where specifically prohibited within the San Juan River SRMAs and Indian Creek Corridor RMZs. In problem areas, the BLM would post restrictions and would consider additional recreational shooting closures. This would continue to result in potential conflicts between user groups where recreational shooting is permitted. An additional 8,814 acres would be closed to recreational

shooting compared to Alternative A. Management impacts would be similar to those under Alternative A with this additional acreage of closure.

Impacts from Designation of Recreation Management Areas

The designation of SRMAs and RMZs, and, to a lesser degree, ERMAs, would serve to manage and protect specific recreational opportunities and experiences on BENM. SRMAs and RMZs in particular benefit recreational resources by setting management strategies for recreational values and characteristics within their boundaries. Measurable outcomes, focused objectives and management actions guiding types and levels of use are attached to each SRMA and RMZ. ERMA recreation management is commensurate to management of other resources or uses in a given area and is focused on sustaining both principal recreational activities and the associated qualities and conditions of the ERMA. The BLM and the USDA Forest Service would collaborate with the BEC and the MAC when developing RAMPs. Such collaboration would ensure that recreation is managed to benefit visitors of all cultural backgrounds while prioritizing the protection of Monument objects. Additionally, the BLM would coordinate with the BEC when developing RAMPs for BENM RMAs. RAMPs could include temporary closures of recreation areas for various reasons, including to preclude disturbance during Indigenous peoples' traditional and ceremonial uses. These closures would reduce the availability of recreational opportunities at certain times of the year and would redirect recreationists to open areas of BENM.

Under Alternative B, the BLM would manage four SRMAs (432,180 acres) and four ERMAs (236,502 acres). Additionally, the BLM would establish 14 RMZs (112,615 acres). Alternative B (along with Alternative C) includes the greatest acreage of designated SRMAs, ERMAs, and RMZs of all action alternatives (although Alternative A designates the most acres of SRMAs). Additionally, of all alternatives, Alternative B manages for the most acres of RSCs, which would allow the BLM to manage areas to intentionally preserve or enhance their social, operational, and physical qualities.

For Indian Creek and Canyon Rims SRMAs, Arch Canyon RMZ, and Dark Canyon Backpacking RMZ, camping would be allowed in designated sites/areas or developed campgrounds only. Additionally, designated dispersed camping would be physically delineated and restricted to designated campsites along designated routes in Cedar Mesa SRMA and Valley of the Gods ERMA. There would also be no dispersed camping at San Juan Hill RMZ. These restrictions on camping activity would reduce the availability of campsites on the Monument for visitors and may result in crowding at designated campgrounds; however, this management would preserve areas of the Monument for future enjoyment, protecting certain areas from dispersed camping encroachment and allowing areas previously used for dispersed camping that are not designated in the future to recover.

No campfires would be allowed in the Dark Canyon Backpacking RMZ. This management would change the backpacking experience in the canyon for some visitors, as campfires constitute a popular activity for many backpackers. No pets or pack animals would be allowed in the Doll House RMZ, which could limit where pet owners could recreate or present difficulties for those relying on pack animals for recreational activities.

Additionally, all new bolts, anchors, or fixed gear on new climbing routes in the Indian Creek SRMA would require BLM approval. This would limit the ability of climbers to set new climbing routes but would benefit other visitors by preserving cultural resources, visual characteristics, and wildlife habitat, thereby conserving the natural character of the Monument.

Solid human waste would be required to be carried out in Indian Creek SRMA, Comb Ridge RMZ, Cedar Mesa Canyons RMZ, Moon House Remote RMZ, San Juan River SRMA, Dark Canyon Backpacking RMZ, White Canyon Canyoneering RMZ, Natural Bridges Overflow RMZ, Beef Basin

ERMA, Valley of the Gods ERMA, and Doll House RMZ. This management would impact recreationists in any of these designated areas of the Monument and would add difficulty to backpacking trips, particularly longer trips in Dark Canyon. This management would also impact visitor experiences at trailheads, where such waste may be disposed; however, this management would preserve these areas for future visitors by minimizing visitor impact, especially if visitation continues to increase.

3.5.7.2.5. Impacts under Alternative C

Compared to Alternative A, Alternative C would place more emphasis on managing recreational activities via permitting and limitations on visitation group sizes and duration of stays. Alternative C would provide facilities for anticipated use where there is a concentration of recreational users, but unlike Alternative A, would mainly confine on-site interpretational materials to public use areas. In areas without recreational development, Alternative C would provide mostly off-site interpretational materials unless required on-site to address impacts to Monument objects. The same management would apply to NFS Semi-Primitive Non-Motorized and Primitive ROS classes and would benefit users at developed sites by providing adequate information while retaining the remote quality of more remote areas by reducing on-site interpretive infrastructure. Under Alternative C, existing facilities would be maintained and new facilities would be placed in high-use areas as needed. Additionally, trail cameras would be allowed via permit only. This would impact hunters' ability to track the movements of game animals with remote cameras on BENM but would also preserve wildlife and benefit hunters who do not have the advantage of game camera access. These closures would limit recreational access to areas of BENM and likely redirect visitors to open areas of the Monument, potentially resulting in crowding. The same management would apply to NFS Semi-Primitive Non-Motorized and Primitive ROS classes. Dispersed camping would also be closed in or near riparian areas/water sources if impacts to those resource are detected from camping activities, and no camping in non-designated sites would be allowed near springs and water improvements. Under Alternative C, redundant hiking trails and social trails would be closed when new hiking trails are designated, unless the redundant and social trails are consistent with the protection of BENM objects. This may provide for more trails than under Alternative A, which would close these redundant and social trails.

Under Alternative C, filming would only be prohibited in designated wilderness and in USDA Forest Service–recommended wilderness and would be limited in areas with sensitive natural or cultural resources. The use of aircraft or UAS for filming would only be allowed for up to 2 days in areas of high recreational use and would only be allowed within 0.5 mile of designated campgrounds during low-use times, and aircraft and UAS would not be allowed for commercial filming. Such decisions would preserve remote recreational experiences and ensure that natural settings are not adversely impacted for long periods of time by filming operations. Such decisions would preserve remote recreational experiences, as would limitations on aircraft use associated with commercial filming.

Agencies would collaborate with the BEC to provide for the protection of paleontological resources and the protection of BENM objects while providing public access to those resources for scientific education and study, and casting would be by permit only. Controls on casual fossil collection would impact the opportunities of recreational collectors but would benefit other visitors by leaving such resources intact for future recreationists to experience. Camping would be prohibited within cultural resource sites under Alternative C, providing similar protection to cultural resources as discussed in Alternative A, but across the entire Monument.

Under Alternative C, pet restrictions would be similar to those under Alternative B, and thus result in similar impacts to recreationists.

Under Alternative C, as under Alternative A, SRPs and SUPs would be used to manage various types of recreation associated with activities, including commercial uses, competitive uses, and recreation in special areas; however, SRPs and SUPs would also be used to educate participants about BENM, with educational materials developed in conjunction with the BEC. All SUPs and SRPs would be consistent with the protection of BENM objects. Such management would enrich the educational opportunities provided to SUP and SRP users on the Monument. Additionally, if water is scarce, agencies would monitor waterbodies to determine necessary restrictions on recreational water pumping or purification activities under SRPs or ISRPs to maintain habitat for aquatic organisms. This restriction may impact the ability of permittees to recreate in certain areas of the Monument at certain times of the year.

Alternative C closes 617,625 acres of BENM to competitive mechanized and competitive motorized activities, restricting where such user groups could host such activities but likely reducing user group conflict and potentially allowing more non-competitive mechanized or non-competitive motorized opportunities by reducing closures due to organized competitive mechanized or motorized events. Overall, however, impacts to existing competitive motorized or competitive mechanized events would be very limited, because the area closure would not overlap with areas where such competitive events are typically held on BLM-administered lands and because there are only two competitive mechanized events in BENM on NFS lands. Permits systems for public use would be in place, or put in place as necessary, for areas of Indian Creek SRMA, Cedar Mesa SRMA, Arch Canyon RMZ (BLM-administered land), Moon House RMZ, San Juan River SRMA, Dark Canyon ERMA, White Canyon ERMA, Beef Basin ERMA, Valley of the Gods ERMA. Impacts of permit systems to recreation opportunities would be similar to those described in Section 3.5.7.2.3 but would apply to a much larger portion of the Monument.

Impacts from Off-Highway Vehicle Travel

Alternative C would designate 700,122 acres as OHV limited and 664,030 acres as OHV closed (more closures and slightly fewer limited acres than Alternative A). Travel planning would be tied to those designations and would occur under future travel and transportation management planning. Additionally, no more roads or dispersed camping opportunities could be added in LWC due to OHV closures in these areas limiting dispersed camping opportunities more than in Alternative A and potentially leading to increased levels of use in open dispersed areas or designated campgrounds. UAS use would be prohibited except at Bluff Airport and Fry Canyon Airstrip and where allowed by permit, limiting the potential for using UAS on the Monument. Such management would limit noise pollution and preserve backcountry and remote social RSCs in areas where that is the desired setting, likely improving the experience of non-motorized, non-UAS recreational users.

Impacts from Recreational Shooting

Recreational shooting management under Alternative C would be similar to Alternative B with the exception that recreational shooting would be prohibited in the Indian Creek SRMA, adding an additional 74,783 acres of recreational shooting closure. The nature of management impacts would be identical to those under Alternative B except in the Indian Creek SRMA, where those who wish to engage in recreational shooting would no longer be able to do so in that area.

Impacts from Designation of Recreation Management Areas

The designation of SRMAs and RMZs, and, to a lesser degree, ERMAs, would serve to manage and protect specific recreational opportunities and experiences on BENM. SRMAs and RMZs, in particular, benefit recreational resources and experiences by setting management strategies for recreational values and characteristics within their boundaries. Measurable outcomes, focused

objectives, and management actions guiding types and levels of use are attached to each SRMA and RMZ (see Appendix E). ERMA management is commensurate to management of other resources or resource uses in a given area and is focused on sustaining both principal recreational activities and the associated qualities and conditions of the ERMA. The BLM and the USDA Forest Service would collaborate with the BEC and the MAC when developing RAMPs. Such collaboration would ensure that recreation is managed to benefit visitors of all cultural backgrounds while prioritizing the protection of Monument objects. Additionally, the BLM would coordinate with the BEC when developing RAMPs for BENM RMAs. RAMPs could include temporary closures of recreation areas for various reasons, including to preclude disturbance during Indigenous peoples' traditional and ceremonial uses. These closures would reduce the availability of recreational opportunities at certain times of the year and would redirect recreationists to open areas of BENM.

Under Alternative C, the BLM would manage four SRMAs (432,180 acres) and four ERMAs (236,502 acres). Additionally, the BLM would establish 14 RMZs (112,615 acres).

In Indian Creek SRMA and Cedar Mesa SRMA, all camping activity would require ISRPs, and group size limitations would be imposed on dispersed camping. Similarly, in the Natural Bridges Overflow RMZ and Valley of the Gods ERMA, campsites in the canyon would be designated and camping then restricted to designated sites and would require a permit. In Arch Canyon RMZ, camping would be allowed only in designated camping areas whereas designated dispersed camping would not be allowed in MSO PACs from March 1 to August 31. There would be no dispersed camping in San Juan Hill RMZ. In Canyon Rims SRMA, Comb Ridge RMZ, and Dark Canyon Backpacking RMZ, camping would be restricted to designated sites or developed campgrounds. These restrictions on camping activity, particularly those related to MSO PACs, would drastically reduce the availability of campsites on the Monument for visitors and may result in crowding at designated campgrounds; however, this management would preserve areas of the Monument for future enjoyment, protecting certain areas from dispersed camping encroachment and allowing areas previously used for dispersed camping that are not designated in the future to recover.

No campfires would be allowed in the Dark Canyon Backpacking RMZ. This management would change the backpacking experience in the canyon for some visitors, as campfires constitute a popular activity for many backpackers. No pets or pack animals would be allowed in the Doll House RMZ, which could limit where pet owners could recreate or present difficulties for those relying on pack animals for recreational activities.

ISRPs would also be required for all climbing activities, and group size limits would be imposed. The permit requirement and group size limits would reduce the number of recreationists allowed to access the climbing at Indian Creek SRMA but would benefit some users by reducing crowding and preserving both the quality of the rock and the natural character of the SRMA. The requirements for agency approval of new bolts, anchors, and fixed gear for new routes would result in the same impacts as described in Section 3.5.7.2.4.

Solid human waste would be required to be carried out in Indian Creek SRMA, Comb Ridge RMZ, Cedar Mesa SRMA, Cedar Mesa Canyons RMZ (if waste becomes an issue), Moon House Remote RMZ, San Juan River SRMA, Dark Canyon Backpacking RMZ (if waste becomes an issue), White Canyon Canyoneering RMZ, Natural Bridges Overflow RMZ, Beef Basin ERMA, Valley of the Gods ERMA, and Doll House RMZ. This management would impact recreationists in any of these designated areas of the Monument and would add difficulty to backpacking trips, particularly longer trips in Dark Canyon. This management would also impact visitor experiences at trailheads, where such waste may be disposed; however, this management would preserve these areas of BENM for future visitors, especially if visitation continues to increase.

3.5.7.2.6. Impacts under Alternative D

Compared to Alternative A, Alternative D would place far more restrictions and limits on recreational use in low use areas. Such restrictions would impact users seeking more remote recreation experiences on BENM. Alternative D allows for implementing restrictions on some or all types of recreation in areas of BENM as necessary to protect other resources, specifically those named as Monument objects. Such closures would limit recreational access to such areas of BENM and likely redirect visitors to open areas of the Monument, potentially resulting in crowding but allowing for needed resource rest and potential recreation benefits if such areas are reopened. If on-site interpretational materials are required, they would mainly be used at cultural sites allocated for Public Use (Developed) and for Roaded Natural and Semi-Primitive Motorized designations. These restrictions for on-site interpretive materials would also apply to other mitigation measures, such as fences, site stabilization, and development of trails to protect cultural resources, and in areas without recreational development, Alternative D would provide mostly off-site interpretational materials unless required on-site to address impacts to Monument objects. Such management would benefit users at Public Use (Developed) sites by providing adequate information while retaining the remote quality of more remote areas of the Monument by reducing on-site interpretive infrastructure. Under Alternative D, redundant hiking trails and social trails would be closed when new hiking trails are designated, unless the redundant and social trails are consistent with the protection of BENM objects. This may provide for more trails than under Alternative A, which would close these redundant and social trails.

Under Alternative D, pet restrictions would be similar to those under Alternative B, with the exception that there would be no specific management regarding pet restrictions in MAs and MZs. Impacts would be similar to those under Alternative B, but to a lesser degree because prohibitions on pets would occur at the same scale.

SRP size thresholds would be determined as needed in implementation plans. Permit systems would be the same as Alternative A until implementation-level planning. Additionally, trail cameras would be prohibited. This would impact hunters' ability to track the movements of game animals via remote cameras on BENM but would also reduce impacts to wildlife and benefit hunters who do not have the advantage of game camera access.

Under Alternative D, hiking impacts would be the same as those described under Alternative A until implementation level planning is completed. Swimming or bathing in in-canyon stream/pool habitat would be prohibited in BENM. This would limit aquatic recreational opportunities in such areas. Water pumping monitoring and restrictions would be the same as Alternative C, although recreationists would be encouraged to not pump from any water sources.

Alternative D would maintain existing developed facilities until implementation-level or site-specific planning is completed. Facilities not serving an administrative, resource protection, public education, or public safety purpose would be removed. No new facilities would be developed under Alternative D except for the explicit purpose of protecting BENM objects, and levels of maintenance or improvement would be determined in subsequent planning efforts. Such management could lead to crowding in areas where resources are provided. However, this would limit services to recreationists in certain areas of the Monument but could benefit those seeking more remote experiences by reducing crowding in areas where services are unavailable. Dispersed camping would also be closed in or near riparian areas/water sources if impacts to those resources are detected from camping activities, and no camping in non-designated sites would be allowed within 0.25 mile of springs and water improvements, unless in a designated site. This would close more camping opportunities than under Alternative A, potentially leading to crowding or heavy use at designated sites. Additionally, there would be limitations imposed based around MSO PACs, such

as no MSO PAC overnight use from March 1 to August 31. These closures, combined with new camping regulations in areas that may overlap the PAC, could drastically limit camping opportunities during the PAC restriction season. Approximately 5.64 miles of Dark Canyon routes, including Black Steer Canyon, and approximately 0.33 mile of Fable Valley Trail, would be impacted by this MSO PAC closure for camping activity, potentially making backpacking trips in canyon settings more difficult. Additionally, on NFS lands, approximately 2.85 miles of Hammond Canyon, 2.07 miles of Horse Pasture Canyon, and 1.79 miles of Texas Trail would be impacted by this MSO PAC camping closure management.

Under Alternative D, no visitors would be allowed into the interior rooms of cultural sites. Although this could restrict the ability of some visitors to experience these cultural resources, visitors would ultimately benefit from such management because it would prolong the preservation of such resources and sites. Land use management decisions potentially impacting recreation resources include those that restrict commercial or other filming activity. Under Alternative D, no commercial filming would be allowed. No film permits would be issued in WSAs. The use of aircraft for filming would not be allowed. Such decisions would preserve remote recreational experiences and ensure that natural settings are not adversely impacted by filming operations. Alternative D also prohibits competitive mechanized or motorized activities throughout BENM, restricting where such user groups may host such activities but likely reducing user group conflict and creating more non-motorized or non-competitive motorized opportunities. Overall, however, impacts to existing competitive motorized or competitive mechanized events would likely be limited.

Agencies would collaborate with the BEC to provide for the protection of paleontological resources and the protection of BENM objects while providing public access to those resources for scientific education and study, and casting would be by permit only. Controls on casual fossil collection would impact the opportunities of recreational collectors but would benefit other visitors by leaving such resources intact for future recreationists to experience. Camping would be prohibited within cultural resource sites under Alternative D, providing similar protection to cultural resources as discussed in Alternative A, but across the entire Monument.

Impacts from Off-Highway Vehicle Travel

Alternative D would designate 381,239 acres as OHV limited and 982,914 acres as OHV closed, the most acres of OHV closed of all alternatives (a greater-than-250% increase of the closed acreage under Alternative A). Travel planning would be tied to those designations and would occur under future travel and transportation management planning. These closures to OHV use, combined with the fact that Alternative D designates the fewest acres of OHV limited, would impact OHV users' ability to recreate in the majority of the Monument. Approximately 190 miles of routes would be within the OHV closed area. Of the routes that would be closed, the majority are short spur routes (some for camping) and rarely used routes, but named routes and route networks, including Arch Canyon, Bull and Imperial Valleys, Lavender Mesa Bench, routes on Baullie Mesa, Lower Mule Canyon and Moqui Canyon would be located within the OHV closed area. This would preserve naturalness and improve the experience for non-motorized users by reducing impacts from OHV use such as noise and dust. UAS use would be prohibited except at Bluff Airport, Fry Canyon Airstrip, and where allowed by permit. Such management would limit noise pollution and preserve backcountry and remote social RSCs in areas where that is the desired setting, likely improving the experience of non-motorized recreational users.

Impacts from Recreational Shooting

Recreational shooting would be prohibited as under Alternative C, with the addition of all WSAs, recommended wilderness, and LWC. This management would have impacts of the same nature as

Alternative C but would close more of the Monument to recreational shooting than Alternative C, which would further reduce the area available to those who wish to engage in recreational shooting. Within WSAs and LWC, prohibiting recreational shooting would ensure that naturalness, outstanding opportunities for solitude, visual resources, wildlife, and cultural sites remain undisturbed. Sufficient alternative sites for recreational shooting would still be available within and outside the Monument, especially closer to populated areas to the east.

Impacts from Designation of Management Areas or Management Zones

Under Alternative D, the BLM would manage 561,219 acres as MAs. Management of MAs is similar to management of ERMAs under H-8320-1, meaning that management of recreation in these areas is commensurate with management of other resources and resource uses. Although this is generally unnecessary, MAs may also be subdivided into RMZs or MZs to ensure recreation and visitor services are managed commensurate with other resources and resource uses. Under Alternative D, the BLM would establish seven MZs comprising 94,999 acres. As a result, the BLM would only manage for specific recreational values and prospects in a subset of the Monument. This, in turn, would limit recreation potential and opportunities for users in certain areas of BENM and concentrate use in areas that are managed for recreational purposes. This management could potentially make it more difficult for the BLM to manage areas intentionally for specific recreation objectives and outcomes, activities, and settings than under Alternative A. Under all action alternatives, any non-MA lands could be designated as such in future plan amendments based on intensity of use and need to protect BENM objects.

The BLM and the BEC would develop management plans for all MAs and MZs. In the interim, existing implementation-level decision including but not limited to existing permit systems, allocations, group size limits, camping restrictions, fire pan requirements, fire restrictions, pet restrictions, SRP requirements, and human waste restrictions applied to the RMAs in Alternative A. In the future, camping areas would be designated, as needed, to reduce user conflicts, provide for public safety, and protect BENM objects in Cedar Mesa MA, San Juan River MA, Dark Canyon MA, and White Canyon MA. In Canyon Rims MA, camping would be restricted to designated sites or developed campgrounds. In the San Juan River MA, campsites would be for permitted users only, and camping would only be allowed in the designated campground on Sand Island MZ. Camping would also be prohibited at Moon House MZ. These restrictions on camping activity, combined with the fact that camping activity on BENM is not evenly dispersed across the Monument, but rather concentrated in certain areas, would reduce the availability of campsites on the Monument for visitors and may result in crowding at designated campgrounds; however, new campgrounds and new designated dispersed camping would be developed in areas that receive heavy use within Canyon Rims MA, thus providing visitors with more camping opportunities.

Additionally, no pets or pack animals would be allowed in the Doll House MZ, which could limit where pet owners could recreate or present difficulties for those relying on pack animals for recreational activities. Additionally, no new SUPs would be issued to the Doll House MZ, and existing permits would not be renewed. This may preclude certain visitors from experiencing the Doll House Ruin and could impact current SUP holders such as guides and outfitters in a financial sense. The general public, who are not subject to the same stipulations and educational measures as those under an SUP, would continue to be allowed to visit the site, potentially reducing the educational quality of the experience of visitors at this site and resulting in less regulated visitor behavior.

3.5.7.2.7. Impacts under Alternative E

Under Alternative E, the agencies would work with BEC to create an interpretation plan for visitation, using a zoned approach to designate areas, including Front Country, Passage, Outback, and Remote Zones. This approach is discussed below under Impacts from Designation of Management Zones. The management outlined in Alternative E is centered on the perspective of the Tribal Nations of the BEC, who do not view many forms of recreation as an appropriate use of the BENM cultural landscape (BEC 2023). Traditional Indigenous Knowledge represents the Bears Ears cultural landscape as a sacred place. Culturally appropriate ways of visiting should therefore be practiced, and recreation should be managed to preserve and protect the cultural values of this landscape (BEC 2023). Under Alternative E, no visitors would be allowed into the interior rooms of cultural sites. Although this could restrict the ability of some visitors to experience these cultural resources, visitors would ultimately benefit from such management as it would prolong the preservation of such resources and sites. Under Alternative E, redundant hiking trails and social trails would be closed when new hiking trails are designated, unless the redundant and social trails are consistent with the protection of BENM objects. This may provide for more trails than under Alternative A, which would close these redundant and social trails.

More restrictive than Alternative A, Alternative E would implement elements such as permits and fees (as necessary) and user number limitations across the entire Monument to limit or control recreational uses that impact Monument objects. Under Alternative E, the agencies would work with the BEC to develop a Monument permit system required for all private day and overnight use in all canyons designed to educate users about the cultural landscape of BENM, Monument rules and regulations, and where penalties and fines apply for permit violations. Alternative E would implement area closures as necessary to prevent recreation-caused damage. Such closures would limit recreational access to such areas of BENM and likely redirect visitors to open areas of the Monument, potentially resulting in crowding but allowing for needed resource rest and potential recreation benefits if such areas are reopened. Additionally, the agencies would coordinate with the Tribal Nations and the BEC to close active raptor nesting areas to visitation as necessary to provide for nesting success. This would include, if necessary, the temporary or permanent closure of any OHV route to nesting areas, as well as the temporary or permanent closure of trails and climbing routes where active nests are located or nesting behavior is observed. This management would seasonally impact the ability of these recreational user groups to engage in their preferred activities. Impacts from closures would be increased in areas where alternative locations to engage in recreational activities are not available. An example of this would be widespread closures in Indian Creek, which is the only dedicated climbing area on BENM. Additionally, under Alternative E, agencies would monitor waterbodies to identify areas where recreational water pumping activities may need to be limited to protect BENM objects. Such management may impact the ability of recreationists to engage in multi-day recreational activities such as backpacking in certain areas of the Monument when pumping limitations are necessary.

Under Alternative E, pet restrictions would be similar to those under Alternative B, with additional prohibitions for entering or touching BENM objects such as structures, relict plant communities, and culturally important habitat. Impacts to recreationists would be similar to those under Alternative B but to a greater magnitude.

The public would be encouraged to stay on trails under Alternative E. The trail system would be inventoried, and the agencies, in collaboration with the BEC, would designate trails to guide visitors to culturally appropriate places. The agencies would seek input from the MAC and from state, local, and Tribal governments when designating trails. Trails and/or areas may also be closed, and areas may be made unavailable to off-trail hiking to protect BENM objects. Potential future area closures

could reduce the recreational opportunities available to some visitors and may lead to increased visitation of remaining designated trails.

No recreational use would be allowed in MSO PAC areas from March 1 to August 31. Such management could introduce far greater seasonal restrictions on activities than under Alternative A and contribute to higher visitation use at open areas of the Monument when MSO PACs are closed. This management would impact several popular routes during a season of popular use. Approximately 5.64 miles of Dark Canyon routes, including Black Steer Canyon, and approximately 0.33 mile of Fable Valley Trail, would be impacted by this MSO PAC closure. Additionally, on NFS lands, approximately 2.85 miles of Hammond Canyon, 2.07 miles of Horse Pasture Canyon, and 1.79 miles of Texas Trail would be impacted by this MSO PAC closure to recreation.

Like Alternative D, this alternative would locate visitor use infrastructure near population centers, highway corridors, and other high-use areas while providing limited facilities at recreational use sites; this alternative would not allow developed recreation features in Remote Zones. Any major developments would be on the periphery of the Monument or in nearby communities, allowing for ease of access for recreationists before they enter BENM. Managing infrastructure and services in this way would permit visitors to better understand the BENM cultural landscape without degrading the objects that such infrastructure was intended to protect (see Appendix L). The intent of such management would be to benefit visitors of all cultural backgrounds by preserving the natural condition of the landscape while providing services and educational materials at accessible locations; however, this would limit the agencies' ability to respond to issues that may arise due to limited ability to provide interior infrastructure. For instance, an effect of this would be limitations on the BLM's ability to respond to dispersed campsite damage caused by increased visitation, because campgrounds could not be developed to provide an alternative to dispersed camping, if needed. This is especially an issue next to Natural Bridges and Canyonlands National Park, because these are dark sky parks that offer visitors limited camping. BLM has documented several dispersed campsites with damage consistent with campers cutting vegetation to allow for slides, carpets being left behind, and other issues, often located near NPS entrances. A lack of ability to respond to these incidents by providing developed camping infrastructure to respond to growing demand may result in overcrowding at existing sites and visible damage that may alter the desired RSCs of an area where unauthorized dispersed camping occurs. Under Alternative E, no commercial filming would be allowed. No film permits would be issued in WSAs. The use of aircraft for filming would not be allowed. Such decisions would preserve remote recreational experiences and ensure that natural settings are not adversely impacted by filming operations.

Agencies would collaborate with the BEC to provide for the protection of paleontological resources and the protection of BENM objects while providing public access to those resources for scientific education and study, and casting would be by permit only. Controls on casual fossil collection would impact the opportunities of recreational collectors but would benefit other visitors by leaving such resources intact for future recreationists to experience. Camping would be prohibited within cultural resource sites under Alternative E, providing similar protection to cultural resources as discussed in Alternative A, but across the entire Monument.

Alternative E would not allow dispersed camping within 0.25 mile of any developed campground. Additionally, dispersed camping sites and areas would be inventoried and monitored by the agencies and would be removed and reclaimed, as necessary, to protect BENM objects. This would limit dispersed camping opportunities more than Alternative A and would potentially lead to overcrowding in designated campgrounds if demand in the Monument increases. Dispersed camping would also be closed in or near riparian areas and water sources if impacts to those resources are detected from camping activities. Camping would also not be allowed within 0.25 mile of surface waters except in existing campsites or camping areas. Notably, as in many desert

environments, most designated backpacking trails on BLM-administered lands are within water courses. Camping regulations in areas that may overlap the PAC could drastically limit camping opportunities during the PAC restriction season; however, new camping sites and areas could be designated by the agencies through implementation-level decisions to address these limited opportunities.

Permits would be required for recreational river trips on the San Juan River, and day and overnight use in all canyons in the Monument. Additional permits could be required if necessary to limit or control activities where damage by recreational use is observed and to provide education. Impacts to recreationists from permits would be similar, but greater in magnitude than those described in Section 3.5.7.2.2, because permits would be required for a much larger portion of the Monument.

Under Alternative E, trail cameras would be allowed via permit only. This would impact hunters' ability to track game on BENM but would also reduce impacts to wildlife and benefit hunters who do not have the advantage of game camera access. Swimming or bathing in in-canyon stream and pool habitat would be prohibited in BENM except where such prohibition would be inconsistent with the Religious Freedom Restoration Act or other applicable laws. This would limit aquatic recreational opportunities in such areas. Solid human waste may be required to be carried out if monitoring efforts identify solid human waste is impacting BENM objects. The requirement to carry out solid human waste would impact recreationists in certain areas of the Monument, if deemed necessary, and would add difficulty to backpacking trips. This management would preserve these areas of BENM for future visitors, especially if visitation continues to increase.

Under Alternative E, new climbing routes that require the placement of bolts, anchors, or fixed gear would require approval from the agencies, in collaboration with the BEC, to determine if the route is appropriate to protect BENM objects, including cultural resources and wildlife. This may limit the climbing potential of BENM for some users because of the additional review required for developing new climbing routes. Site-specific impacts may also lead to climbing route closures or rerouting of access trails, which would protect BENM objects while reducing opportunities available to climbers and commercial guides.

Impacts from Off-Highway Vehicle Use

Alternative E would designate 794,181 acres as OHV limited and 569,971 acres as OHV closed (slightly more closed acres and slightly fewer limited acres available than under Alternative A). Travel planning would be tied to those designations and would occur under future travel and transportation management planning. These closed acres would impact OHV users' ability to recreate in certain areas of the Monument; however, such management would preserve naturalness and improve the experience of non-motorized users by reducing impacts associated with OHV use such as noise pollution and dust. UAS use would be prohibited except at Bluff Airport, Fry Canyon Airstrip, and where formally authorized, limiting the potential for using UAS on the Monument. Such management would limit noise pollution and preserve the land's natural character, likely improving the experience of non-motorized, non-UAS recreational users.

Impacts from Recreational Shooting

Recreational shooting activities would be prohibited in all areas of BENM under Alternative E. This would eliminate the potential for conflicts with other users in BENM. Eliminating recreational shooting access would preclude this activity in the Planning Area and adversely impact those who engage in recreational shooting, requiring them to find other areas of public land in the vicinity on which to recreationally shoot; however, there is minimal recreational shooting activity on the BLM-administered portion of BENM, and there are no designated recreational shooting areas such as

ranges on the Monument. There is some recreational shooting on NFS lands, mainly associated with dispersed camping activity. Due to the limited opportunities provided by the agencies for recreational shooting, impacts to shooters would likely be minimal, although impacts may be felt more strongly on NFS lands. Additionally, such management would provide environmental benefit by preventing noise pollution and lead fragments from bullets leaching into soils and waterways, protecting wildlife from lead poisoning and retaining the natural character of BENM for visitors seeking a more remote experience. This prohibition does not apply to the use of firearms in the lawful pursuit of game.

Impacts from Designation of Management Zones

Instead of utilizing SRMAs/ERMAs and RMZs, the agencies would use a zoned approach to manage recreation. (The exception is Moon House RMZ, which would be managed as under Alternative B). This would mean that no areas would be designated specifically to have recreation-focused management, potentially limiting the BLM's ability to allocate resources, funding, and attention to address recreation-focused needs or issues when compared to Alternative A. Recreation zone management under Alternative E would be focused on managing visitation and recreation in a manner that protects BENM objects (see Appendix L). Of the 1,489,107 recreation zone acres, 18,995 would be managed as Front Country; 7,498 would be managed as Passage; 265,299 would be managed as Outback; and 1,072,587 would be managed as Remote. These landscape-level management zones would be used to manage visitation and recreation uses. Climbing on cultural sites would be prohibited, which would serve to protect these features for visitors to enjoy in the future.

The Front Country Zone would be the focal point for visitation at high-visitation sites and near communities or paved routes and would provide most visitation infrastructure. This would serve recreationists looking for a more developed experience with more interpretation and amenities. The Front Country and Passage Zones would contain all on-site interpretive materials. The Passage Zone would provide a less developed visitation experience than the Front Country Zone, but basic facilities would be provided as consistent with the protection of BENM objects. The Passage Zone would likely provide a less crowded and developed setting for recreationists to enjoy along secondary travel routes, with less evidence of use. Existing and new campgrounds or facilities would be permitted, and new trails could be developed under the Front Country and Passage Zones. This would benefit visitors by addressing increasing visitation demands and expanding access to Monument areas within these zones.

The Outback Zone, substantially larger than either the Front Country Zone and the Passage Zone, would contain a natural and undeveloped recreation setting, providing only trailheads, minimal informational infrastructure, existing developed campgrounds, and dispersed camping opportunities. The Outback Zone, like the Remote Zone, would rely on off-site interpretive materials unless needed to protect BENM objects. This setting would benefit users looking for more remote recreation experiences but may deter those seeking informational materials and facilities from visiting these areas. No new recreational sites or facilities would be developed in this zone. Minor facilities such as trails, trailhead markers, and informational kiosks would only be allowed in existing recreation sites and only when necessary to protect BENM objects. Although such management would maintain the natural setting of this zone, this may prevent the agencies from responding to growing recreational demands and may result in issues such as unanticipated levels of dispersed camping activity due to a lack of developed campgrounds.

The Remote Zone, by far the largest recreation zone, would provide a natural, undeveloped, and self-directed experience for visitors while limiting motorized or mechanized access, benefiting visitors who seek a more remote experience by preserving the natural characteristics of a large

area of BENM. No new facilities, sites, or trails would be allowed in Remote Zones, which could be to the detriment of visitors seeking a more developed experience; however, existing trails could be designated if consistent with the protection of BENM objects, which could benefit users by providing more recreational opportunities. This zone is also intended to have limited motorized or mechanized access, making this zone less accessible to those user groups. Under Alternative E, all hiking would be limited to designated trails, limiting overland access and exploration on BENM while preserving natural recreation settings and reducing evidence of use in off-trail areas.

The San Juan River would be managed the same as under Alternative A with the exception that campsites would be designated as needed to protect Monument objects or to reduce user conflicts, which would generally be to the benefit of recreationists and would preserve the natural character of the San Juan River.

3.5.7.2.8. Cumulative Impacts

The cumulative effects analysis area for recreation is the Planning Area. The cumulative impacts of past and present actions on recreation use and visitor service in the Planning Area are captured in the description of the affected environment. Activities in nearby communities, nearby BLM-administered lands and NFS lands, and resource-use activities may contribute to cumulative effects. Impacts from activities originating outside the BENM boundary—noise and dust from OHV use, impacts from potential development, including changes to the visual quality of the area and noise, and the spread of invasive species or wildfire—could impact resources on the Monument and impact the quality of recreational opportunities.

Past, present, or reasonably foreseeable future recreation projects within the recreation analysis area could also contribute to cumulative impacts. Such projects are listed in Appendix J. These projects would generally contribute in a positive manner to cumulative impacts by improving or expanding recreational facilities. Alternative B would likely contribute in a similar manner, as under this alternative, new recreation facilities would be developed to enhance visitor experience. Past, present, or RFFAs related to fire and fuels treatments, the Daneros Mine expansion, the Summit Operating, LLC pipeline ROW, the emergency repair of the UDOT San Juan River Bridge, and various range improvements could have adverse impacts to recreation, although impacts could be short term, as for the bridge repair. Similarly, campground improvements at Hamburger Rock and Goosenecks Campgrounds would have short-term impacts to recreation during construction but would eventually provide the benefit of improved campground resources to visitors. Additionally, a plausible RFFA could be a designated shooting range outside of BENM, which would reduce the potential for illicit recreational shooting activity on BENM.

If, as predicted, recreation demands continue to increase across the state of Utah and in recreation areas near BENM—Glen Canyon NRA, Goosenecks State Park, Canyonlands National Park, and NBNM—in particular, visitors seeking out a more remote, small-group recreation experience may opt to recreate in BENM instead. Alternatives B and C include SRMAs, ERMAs, and RMZs that identify areas in which the BLM would prioritize funding and resources for recreation management, although the acres designated as RMAs and RMZs vary by alternative. Alternative D would designate MAs and MZs to manage recreation, and management under Alternative D would be far less recreation-prioritized than Alternative A due to this distinction. Alternative E would provide remote, small-group recreation potential through recreation zones, although the majority of the Monument under this alternative may be less accessible to visitors seeking recreational amenities. The recreation management under Alternatives B, C, D, and E would contribute incrementally to these cumulative impacts by similarly managing for recreational experiences within the Monument.

3.5.8. Travel, Transportation, and Access Management

As part of the land use planning process for BENM, the BLM, with public input, would make OHV management area designations. At the land use planning level, the BLM is required to designate all public lands as areas open, limited, or closed to motorized travel activities, as defined in 43 CFR 8340.0-5. The designation of these areas would guide future implementation-level travel management planning for OHV use where agencies would designate travel routes within BENM. These designations are done outside the management planning process through a site-specific, implementation-level travel plan. Proclamation 9558, which is incorporated into Proclamation 10285, additionally requires that agencies prepare a transportation plan for BENM that designates roads and trails. Route designations are implementation-level decisions that will be analyzed in accordance with 43 CFR 8342.1 and 36 CFR 212 separately through the travel management planning process. The TMP process evaluates and designates routes to provide a high-quality travel network for a variety of uses. The TMP provides a process for determining a comprehensive and maintainable route network while ensuring the protection of BENM objects, including aquatic, riparian, and upland resources. Under all alternatives, implementation-level travel management would be developed using TMP criteria for road and trail designations as outlined in Appendix H. Until an implementation-level TMP, emergency order, or other NEPA analysis is completed for BENM, all current implementation-level route designations within areas designated in the 1986 Manti-La Sal LRMP, 2008 Moab RMP, 2008 Monticello TMP and the 2020 ROD/MMPs as OHV limited would remain in effect.

Similar to the BLM, the USDA Forest Service designates areas as open or closed to OHV use. In areas that are open, the USDA Forest Service designates routes and assigns a maintenance level. The maintenance level defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. USDA Forest Service roads are assigned a maintenance level between 1 and 5, which defines the level of service provided by, and the maintenance required for, a specific road.

3.5.8.1. AFFECTED ENVIRONMENT

Current transportation and access routes into and through the Planning Area consist of federal and state highways; BLM and NFS roads, primitive roads and trails; county road systems; and private ROW access roads.²⁶ The transportation system includes approximately 141 miles of federal and state highways, 1,364 miles of BLM motorized routes and 476 miles of NFS motorized routes, 198 miles of BLM non-motorized and equestrian routes, 3 miles of BLM mechanized routes, and 612 miles of NFS non-motorized routes. The current travel system is shown in Appendix A, Figure 3-40, Current travel system.

As described above, the BLM manages motorized access under three designations. These designations are based on BLM land use planning decisions that consider natural resource protection, route utility, and public safety. The OHV categories are 1) “open,” which allows for unlimited OHV travel, including cross-country travel, 2) “limited,” where OHV use is restricted to

²⁶ The State of Utah and its counties may hold valid existing ROWs in the Planning Area pursuant to Revised Statute 2477 (R.S. 2477), Act of July 28, 1866, Chapter 262, 8,14; Stat. 252, 253, codified at 43 USC 932. Congress repealed R.S. 2477 through passage of FLPMA. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's land use planning process. This planning effort is not intended to provide any evidence bearing on or addressing the validity of any R.S. 2477 assertions and does not adjudicate, analyze, or otherwise determine the validity of claimed ROWs. Nothing in this BLM RMP is intended to extinguish any valid existing ROW or alter in any way the legal rights the state and counties may have to assert and protect R.S. 2477 rights in federal court consistent with applicable law. At such time as a decision adjudicates an R.S. 2477 ROW, the BLM will adjust its management accordingly, if necessary.

meet specific resource management objectives, and 3) “closed” to OHV use, where no OHV use can occur.²⁷

The USDA Forest Service manages roads under five maintenance levels, which are as follows:

- **Maintenance Level 1:** Assigned to intermittent service roads that are closed to vehicular traffic but may be open and suitable for non-motorized uses. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level.
- **Maintenance Level 2:** Assigned to roads open for use by high-clearance vehicles where passenger cars are discouraged or prohibited and high-clearance vehicles are accepted or discouraged. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log hauling may occur at this level.
- **Maintenance Level 3:** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car where passenger cars are either encouraged or accepted and can be discouraged or prohibited for certain classes of vehicles or users. Roads in this maintenance level are typically low speed and single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material.
- **Maintenance Level 4:** Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds and where passenger cars are encouraged. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated.
- **Maintenance Level 5:** Assigned to roads that provide a high degree of user comfort and convenience and where passenger cars are encouraged. Roads are usually double lane and paved. Some may be aggregate surfaced and dust abated.

The USDA Forest Service manages motorized use according to the 2005 Motorized Travel Management Rule (36 CFR 212). The agency uses ROS classes to determine suitability for motorized uses. The classes used in BENM and their descriptions are as follows:

- **Primitive:** Large remote, wild, and predominantly unmodified landscapes; areas with no motorized activity and little probability of seeing other people; few management controls.
- **Semi-primitive non-motorized:** Areas of the forests managed for non-motorized use; uses include hiking and using equestrian trails, mountain biking, and using other non-motorized, mechanized equipment; rustic facilities and opportunity for exploration, challenge, and self-reliance.
- **Semi-primitive motorized:** Backcountry areas used primarily by motorized users on designated routes; roads and trails designed for OHVs and high-clearance vehicles; offers motorized opportunities for exploration, challenge, and self-reliance; rustic facilities; often provides portals into adjacent primitive or semi-primitive non-motorized areas.
- **Roaded natural:** Frontcountry areas accessed by open system roads that can accommodate sedan travel. Facilities are less rustic and more developed, with campgrounds, trailheads, and airstrips often present. Provides access points for adjacent semi-primitive motorized, semi-primitive non-motorized, and primitive settings.

²⁷ For purposes of this analysis, the term OHV is defined in accordance with 43 CFR 8340.0-5(a).

- **Rural: Highly developed recreation sites and modified natural settings; easily accessed by major highways; in populated areas where private land and other land holdings are nearby and obvious; facilities are designed for user comfort and convenience.**

OHV use within areas designated as OHV limited areas on BLM-administered lands will be managed according to the 2008 Monticello RMP, 2008 Moab RMP, and subsequent travel decisions, until or unless new implementation-level travel planning is completed. Motorized uses on NFS lands will be managed according to the most recent Monticello Ranger District motorized vehicle use map.

Demand for recreation access on the travel and transportation network is expected to continue to increase in the Planning Area. Increased travel across public lands by motorized and non-motorized equipment would increase the need to manage, maintain, and in some cases, improve the transportation system on some routes. The undeveloped nature and unique natural setting of the area is highly valued by certain user groups and by Tribal Nations, and development and improvement would need to be carefully considered.

Within the Planning Area, there has been an increase in the types and variety of recreation activities. OHV use has increased due to the growing popularity of ATVs and UTVs, changes in demographics, increased commercial availability (purchase and rental opportunities), and marketing of multi-passenger OHVs. Some locations within BENM receive unmanaged, intensive OHV use based on landscape characteristics and easy access from local communities.

Unmanaged and unregulated recreational use in BENM is identified as a major threat to values held by Tribal Nations (see Appendix L). Navajo ethnobotanist Arnold Clifford has documented the changes that have occurred on BENM lands from decades of human visitation, including the creation of numerous trails that has altered the character of once near-pristine canyons. These new trails have led to the destruction of fragile and essential BSCs. Other concerns related to OHV use include the development of ruts, damaged root systems of natural trees and plants, compacted soil, increased erosion, increased frequency of dust storms, increased sedimentation of waterways and springs, and user conflicts (see Appendix L). OHV use can damage archaeological sites directly and provide access to archaeological sites in remote locations where the potential for vandalism and pothunting is high (see Appendix L).

In addition, Tribal Nations of the BEITC value the auditory environment and believe that the sounds of nature should remain pristine. Tribal Nations of the BEITC consider BENM to be a spiritual place and thus value peace and quiet. Hopi people believe that the spirits of their ancestors still reside at BENM, and any disruption of peace will disturb them (see Appendix L). Motorized use has affected the soundscape in areas of BENM by introducing noise into the environment.

Controversy surrounding continued motorized access for recreational users and other permitted users will affect planning efforts in BENM. Increased dispersed camping along designated routes is causing resource impacts and will need to be considered in both recreation and travel management implementation-level planning.

Increased visitation to cultural sites and climbing areas and increasing motorized use on designated routes will affect future travel and transportation planning. Considerable controversy exists over motorized access within Arch Canyon and will need to be considered as part of the area designation process.

Recreation uses of the USDA Forest Service transportation system has increased while road maintenance funding has decreased over the past two decades (USDA Forest Service 2018).

Combined with a large backlog of deferred maintenance, this has caused deteriorated road conditions and will likely cause the transportation system to deteriorate faster. As a result of decreasing budgets, routine maintenance is reduced; maintenance cycles have been extended; and selective repairs are made to ensure public safety and prevent significant resource damage. Over time, roads may develop severe public safety or resource damage issues and may need to be evaluated for closure. The USDA Forest Service has continued partnerships with local county governments and other land management agencies over the past two decades, which has been helpful for road maintenance.

The popularity of UASs, also known as drones, has increased in recent years, as most have become more affordable to the public. UAS are banned in several national monuments and state parks and are temporarily banned in national parks due to safety, noise, and impacts to wildlife. Presidential Proclamation 10285 does not address UAS use in BENM. The launching and landing of UAS are managed as OHVs by the BLM per BLM Handbook H-8342. The USDA Forest Service considers all UAS to be aircraft, which are managed per the Aviation Management Handbook – FSH 5709.16. UAS are another potential source of unnatural sound that may affect the natural soundscape valued by Indigenous peoples.

3.5.8.1.1. BLM

The combination of highways, state roads, secondary paved and unpaved roads, and trails in the Planning Area creates the access network for current uses (e.g., recreation, range management, and timber management) and is expected to provide access for future use. Several roads in the Planning Area cross various surface management ownership, including Utah Trust Lands, NFS, and lands in private ownership. Management and use of routes on BLM-administered lands is consistent with BLM Travel and Transportation Manual 1626, Handbook 8342 (BLM 2012), and other applicable guidance.

BENM has a mix of travel opportunities, ranging from well-maintained paved roads to rugged 4WD trails (see Appendix A, Figure 3-40, Current travel system). In addition to OHV use, the travel network allows for a variety of permitted uses, including SRPs, ranching, and research. A defining feature of the travel network on BLM-administered lands in the Planning Area is that several paved highways and maintained B roads fully cross BENM in multiple directions, providing easy access to sites in front and middle country locations, as well as accessing the large network of unmaintained routes, which in turn lead to more backcountry and remote recreational opportunities. In the northern portion of the Monument, SR-211 and the Indian Creek Corridor Scenic Byway provide access to popular sites in Indian Creek, including Newspaper Rock, Superbowl Campground, Creek Pasture Campground, Hamburger Rock Campground, and Indian Creek Falls Group Campsite before terminating at the Needles District of Canyonlands National Park.

SR-95, also known as the Bicentennial Highway, cuts across BENM east to west and provides access to exceptional scenic views, OHV trails, and developed cultural sites, such as the Butler Wash Interpretive Site, Mule Canyon Village, and the Salvation Knoll Trail. SR-316, accessed from SR-261, leads to Goosenecks State Park, and SR-276 provides sweeping views of Red House Cliffs and access to the Collins Trailhead south of its origin on SR-95.

SR-261 bisects Cedar Mesa north to south between SR-95 and U.S. Highway (US) 163 and provides access to the Kane Gulch Ranger Station, the Moki Dugway, and a network of County B routes leading to developed pedestrian trailheads. US-163 provides access from Bluff, Utah, to Sand Island Campground before crossing the south end of Comb Ridge and bounding the southeast side of the Planning Area.

There are also two major highways outside the Planning Area: US-191 (bounds the east side of BENM) and SR-275 (leading to NBNM), which are used by visitors to access recreation opportunities within BENM. SR-95, SR-275, SR-261, and US-163, in combination with various other U.S. highways, state routes, and county roads, make up the Utah portion of the federally designated Trail of the Ancients National Scenic Byway.

Several other well-traveled designated routes in the Planning Area are Butler Wash and Comb Wash Roads, which provide access to the east and west sides of the large north-south-trending rock formation of Comb Ridge, respectively. Valley of the Gods Road is a popular 17-mile scenic drive between US-163 and SR-261. The Elk Ridge Road Scenic Byway, including North Cottonwood Wash Road and Elk Ridge Road, travels generally north-south across NFS lands from Indian Creek to Bears Ears Buttes, whereas Lockhart Basin Road travels a rugged track north from Indian Creek to the Colorado River outside Moab, Utah. The Needles/Anticline Overlook Scenic Backway, or County Road 133, is mostly located outside the Planning Area but accesses two developed overlooks within Canyon Rims Recreation Area. Clay Hills Road accesses Clay Hills Boat Ramp, outside the Planning Area. The travel plan also includes a network of miles of improved and primitive roads providing access to more remote parts of the Planning Area, such as Dark Canyon SRMA, Beef Basin SRMA, and Mancos Mesa WSA (BLM 2008).

There are many footpaths and trails managed for non-motorized and non-mechanized use designated in the travel plan for uses such as hiking trails, climbing approaches, and equestrian use. There are approximately 198 miles of designated non-motorized routes (BLM and USDA Forest Service GIS 2022).

All OHV and mechanized (e.g., bicycle) travel within the Decision Area is allowed on routes designated for those purposes and in areas designated as OHV open. Table 3-136 displays the existing travel area designations in the Decision Area. There are currently 0 acres of land designated as OHV open, meaning that cross-country OHV travel is prohibited within the entire BENM. There are approximately 3 miles of designated mechanized routes (BLM GIS 2022).

Table 3-136. Existing BLM Travel Area Designations in the Decision Area

Travel Area Designation	Acres
BLM Open	0
BLM Limited	685,403
BLM Closed	389,645

Source: BLM and USDA Forest Service GIS (2022).

There are approximately 20 miles of routes designated specifically for ATV use and 1 mile of route designated specifically for motorcycle use. Mechanized travel is limited to designated roads and trails. Non-mechanized uses are permitted throughout BENM, unless limited for resource protection purposes.

There are 11 backcountry airstrips located on BLM-administered lands within BENM (Utah Back Country Pilots Association 2023). Of these, the Fry Canyon Airstrip is an open route designated for use by aircraft. The others are not currently designated for use by aircraft, but could be through future implementation-level decisions.

Most use on existing roads, primitive roads, and trails on BLM-administered lands are defined as casual use. Other travel considerations associated with official use and authorized actions (e.g., livestock grazing, forestry, and emergency purposes) may be considered during the planning

process. Official uses and authorized uses are exempt from OHV regulations; the BLM would consider these kinds of uses when determining the purpose of and need for routes individually and as a network.

The BLM can impose limitations on the type of vehicle allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing disturbance to the soil, wildlife habitat, cultural resources, vegetative resources, or creating user conflicts. Such impacts are a particular concern to Tribal Nations (see Appendix L), as discussed in more detail later in this section.

The BLM currently manages two scenic byways in the BENM Planning Area. The Indian Creek Corridor Scenic Byway encompasses SR-211 (junction with US-191 14 miles north of Monticello) to its terminus at the Needles District of Canyonlands National Park. The Bicentennial – Trail of the Ancients National Scenic Byway encompasses SR-95 from south of Blanding west across the Colorado River at Glen Canyon National Park (with a loop through NBNM).

The BLM manages four scenic backways in the BENM Planning Area: the Lockhart Basin Road, Elk Ridge Road, Abajo Loop, and Trail of the Ancients Scenic Backways. The Lockhart Basin Road Scenic Backway includes Kane Creek Boulevard at the intersection of US-191 to Hurrah Pass and onto Lockhart Basin Road in the Monticello PA and ends at SR-211 near Indian Creek. The Elk Ridge Road Scenic Backway begins 25 miles west of Blanding at the junction of SR-25 and SR-275; it turns onto Forest Road (FR) 088 (through the Manti-La Sal National Forest) and ends 48 miles later at the junction of SR-211. The Abajo Loop Scenic Backway begins west from Monticello on FR 105 to the junction of FR 079 and ends 35 miles later in the town of Blanding. The Trail of the Ancients Scenic Backway follows SR-261, including the Moki Dugway, from SR-95 to SR-163, and intersects SR-316 to the Goosenecks State Park. The Valley of the Gods road intersects SR-261 below the dugway for a 17-mile-long dirt and gravel loop drive.

3.5.8.1.2. USDA Forest Service

The USDA Forest Service travel plan includes forest highways, forest development roads, and trails. There are 476 miles of travel routes within BENM managed by the USDA Forest Service. All motorized use is limited to designated roads and trails, and cross-country motorized travel is prohibited on these NFS lands.

NFS roads are assigned a maintenance level from 1 to 5, which defines the level of service provided by and the maintenance required for a specific road. The maintenance level of the roads within BENM are shown in Table 3-137.

Table 3-137. Existing Maintenance Levels

Maintenance Level	Miles
Level 1	136
Level 2	337
Level 3	3
Level 4	0
Level 5	0
Total	476

Source: BLM and USDA Forest Service GIS (2022).

The 2005 Travel Management Rule (36 CFR 212) is used to inform decisions related to the designation of roads, trails, and areas for motor vehicle use. Under Presidential Proclamation 10285, new roads and motorized trails would only be constructed to protect objects in BENM and to protect public safety.

In its 2015 *Travel Analysis Report for Subpart A Manti-La Sal National Forest*, the USDA Forest Service found that approximately 37 roads (approximately 21 miles) were identified as “likely not needed” in BENM (USDA Forest Service 2015).

Most of the NFS routes in BENM are classified as having no motorized uses (semi-primitive non-motorized or primitive) (Table 3-138). Within the semi-primitive non-motorized and primitive areas, there are approximately 612 miles of non-motorized routes.

Table 3-138. Recreation Opportunity Spectrum Classes

ROS Class	Acres
Primitive	48,440
Semi-primitive non-motorized	128,752
Semi-primitive motorized	86,163
Roaded natural	25,700
Rural	0

Source: BLM and USDA Forest Service GIS (2022).

The primary areas of focus for access are: 1) providing an adequate road system to meet the needs of public recreation and discretionary uses, 2) maintaining the road system to standards with a limited and decreasing budget, and 3) minimizing impacts on natural resources, including wildlife and fish habitats, as well as municipal water supplies resulting from soil erosion. Some of the issues facing travel management in the Planning Area are as follows:

- Funding is inadequate for maintaining the current transportation system to standard.
- Some roads are causing adverse impacts to soil productivity, water quality, wildlife habitat, and cultural resources.
- Resources are being damaged as a result of motor vehicle travel off system roads.
- There are some roads that are likely not needed or that present a greater risk of causing adverse impacts on the surrounding environment than they are beneficial in providing access opportunities.

3.5.8.2. ENVIRONMENTAL CONSEQUENCES

3.5.8.2.1. Issue

- How would proposed travel designations affect the travel and transportation system in BENM, including impacts to resources?

3.5.8.2.2. Impacts Common to All Alternatives

Management that limits or restricts access based on the values of preserving cultural and Tribal resources, wildlife habitat, special status species, or other resources could have an adverse impact on travel, transportation, and access.

There are no areas designated as OHV open within BENM and no areas proposed as OHV open under any alternative. This would continue to prohibit cross-country OHV and mountain bike travel in BENM. Area designations would not affect ROWs, authorized and administrative uses, state roads, or valid existing rights. Table 3-139 lists the acres of proposed OHV travel management designations by alternative.

Table 3-139. Proposed Off-Highway Vehicle Travel Management Designations by Alternative

Proposed OHV Travel Management Designations	A (acres)	B (acres)	C (acres)	D (acres)	E (acres)
BLM OHV closed	389,645	389,645	487,048	805,932	392,989
BLM OHV limited	685,403	685,403	588,000	269,117	682,059
BLM OHV open	0	0	0	0	0
USDA Forest Service closed to OHV travel	46,430	176,982	176,982	176,982	176,982
USDA Forest Service limited to OHV travel	242,677	112,122	112,122	112,122	112,122
Total	1,364,155	1,364,152	1,364,152	1,364,153	1,364,152

Source: BLM and USDA Forest Service GIS (2022).

Potential effects on access would occur to varying degrees across alternatives. Increased visitation under all alternatives would result in continued pressure on transportation assets, both non-motorized use within BENM and OHV use in surrounding areas. Under all alternatives, public use of BENM for landings and takeoffs of motorized aircraft would be allowed at Bluff Airport and Fry Canyon Airstrip. All alternatives would clarify motorized aircraft to include, but not be limited to, fixed-wing aircraft, helicopters, powered paragliders, electric aircraft, and UAS.

Under all alternatives, the agencies are required by Proclamation 10285 to prepare a travel and transportation management plan that designates the roads and trails where motorized and non-motorized mechanized vehicle use would be allowed. New motorized routes could only be designated to protect Monument objects or protect public safety.

3.5.8.2.3. Impacts under Alternative A

Off-Highway Vehicle Area Designations

Under Alternative A, OHV use on BLM-administered lands would continue to be limited to designated routes across 685,403 acres, and 389,645 acres would be managed as OHV closed (see Table 3-139). OHV use would continue to be limited to designated routes across 242,677 acres of NFS lands, and 46,430 acres would be managed as OHV closed (see Table 3-139). Areas managed as OHV closed would protect cultural, scenic and recreational values to a greater extent than areas designated as OHV limited but would result in more impacts to OHV access. Alternative A would manage the fewest acres of OHV closed areas of the alternatives.

Under Alternative A, future travel planning would attempt to incorporate San Juan County's OHV route system. This would provide benefits for users seeking OHV opportunities because it would provide unique OHV opportunities in areas identified as OHV limited while still meeting BLM goals and objectives for travel management and recreation. This could also result in impacts to natural resources, including destruction of vegetation, erosion, increased noise, habitat fragmentation, and other impacts (Ouren et al. 2007).

Travel Priorities and Access Opportunities

Alternative A would continue to allow public use of BENM for landings and takeoffs of motorized aircraft at Bluff Airport and Fry Canyon Airstrip and would not clarify the public use of UAS within BENM. This would benefit access for motorized aircraft use because it contains the fewest restrictions of all alternatives. Until an implementation-level travel network is adopted in a new TMP, Alternative A would continue to manage the existing network of non-motorized and non-mechanized trails per the 1986 Manti-La Sal LRMP, 2008 Monticello RMP and subsequent travel decisions, 2008 Moab RMP, and the 2020 ROD/MMPs. Alternative A would not include management for maintenance of or signage for trails, which could limit the ability of the agencies to protect BENM objects compared to the action alternatives.

3.5.8.2.4. Impacts under Alternative B

Off-Highway Vehicle Area Designations

Under Alternative B, areas designated as OHV limited and OHV closed on BLM-administered lands would be the same as Alternative A. On NFS lands, OHV use would be limited to designated routes across 112,122 acres, and 176,982 acres would be managed as OHV closed (see Table 3-139). This would protect cultural, scenic, and recreational values to a greater extent than under Alternative A but would result in more impacts to access due to the additional NFS acreage managed as OHV closed. Additionally, agencies would coordinate with local government, the BEC, and Tribal Nations on implementation-level planning, which could provide benefits for OHV users.

Travel Priorities and Access Opportunities

Under Alternative B, public use of BENM for landings and takeoffs of motorized aircraft would be limited to Bluff Airport and Fry Canyon Airstrip, with the potential for additional locations to be identified in future implementation-level decisions; however, new airstrip designations would likely be limited by language in Proclamation 10285 that limits new motorized vehicle uses in BENM. Public use of BENM for UAS landings and takeoffs would be prohibited in OHV closed areas and within 300 feet of developed recreation sites and areas. This would limit access for motorized aircraft compared with Alternative A. Alternative B would manage the non-motorized and non-mechanized trails identified the 2008 Monticello RMP, 2008 Moab RMP, and 1986 Manti-La Sal LRMP until the implementation-level travel plan is complete. This would provide for greater non-motorized and non-mechanized access compared with Alternative A. Alternative B includes management direction to maintain designated trails for non-motorized and non-mechanized use and would improve signage on travel corridors so that land users understand land-use rules and regulations. This would further improve non-motorized and non-mechanized trail access compared with Alternative A, as well as enable the agencies to protect BENM objects.

3.5.8.2.5. Impacts under Alternative C

Off-Highway Vehicle Area Designations

Under Alternative C, 588,000 acres of BLM-administered lands would be managed as limited to OHV use and 487,048 acres would be managed as closed to OHV use (see Table 3-139). On NFS lands, areas designated as OHV limited and closed would be the same as described for Alternative B. Overall, the nature of the impacts on travel, transportation, and access resulting from OHV area designations would be similar to but greater in degree than those described under Alternative B due to the larger portion of BLM-administered lands managed as closed to OHV use. In total,

approximately 97,403 more acres of BLM-administered lands and 130,845 more acres of NFS lands would be managed as OHV closed when compared with Alternative A.

Travel Priorities and Access Opportunities

Alternative C would prohibit public use of BENM for landings and takeoffs of motorized aircraft, with the exception of allowing landings and takeoffs of non-UAS motorized aircraft at Bluff Airport and Fry Canyon Airstrip. Under Alternative C, public use of BENM for UAS landings and takeoffs would be prohibited. This would eliminate most public access of BENM for UAS, except for authorizations for case-by-case landings and takeoffs through formal permitting processes, where the use is beneficial to protecting BENM objects. Management of non-motorized and non-mechanized trails would be the same as under Alternative B, resulting in similar impacts to non-motorized and non-mechanized trail access.

3.5.8.2.6. Impacts under Alternative D

Off-Highway Vehicle Area Designations

Under Alternative D, 269,117 acres of BLM-administered lands would be managed as limited to OHV use and 805,932 acres would be managed as closed to OHV use (see Table 3-139). On NFS lands, areas designated as OHV limited and closed would be the same as Alternatives B and C. Overall, the nature of the impacts on travel, transportation, and access resulting from OHV area designations would be similar to but greater in degree than those described under Alternatives B and C due to the larger portion of BLM-administered lands managed as closed to OHV use. In total, approximately 416,300 more acres of BLM-administered lands and 130,845 more acres of NFS lands would be managed as OHV closed when compared with Alternative A.

Travel Priorities and Access Opportunities

Under Alternative D, impacts on access for motorized aircraft and non-motorized and non-mechanized trail users would be the same as those described under Alternative C.

3.5.8.2.7. Impacts under Alternative E

Off-Highway Vehicle Area Designations

Under Alternative E, 682,059 acres of BLM-administered lands would be managed as limited to OHV use and 392,989 acres would be managed as closed to OHV use (see Table 3-139). On NFS lands, areas designated as OHV limited and closed would be the same as the other action alternatives. Overall, the nature of the impacts to travel, transportation, and access resulting from OHV area designations would be similar to the other action alternatives, particularly Alternative B, due to the similar travel allocations.

Travel Priorities and Access Opportunities

Under Alternative E, aircraft takeoffs and landings would be limited to Bluff Airport and Fry Canyon Airstrip. Public UAS use would be prohibited throughout BENM, although permitted UAS use may be allowed through formal authorizations, where use would be beneficial to protecting BENM objects. Agencies would consider seasonality of use for formal authorizations in collaboration with the BEC.

The public would be encouraged to stay on existing or designated trails under Alternative E. The trail system would be inventoried, and the agencies, in collaboration with the BEC, would designate trails to guide visitors to culturally appropriate places. The agencies would seek input from the MAC

and from state, local, and Tribal governments when designating trails. Under Alternative E, the agencies would identify whether specific areas would need to be closed to cross-country hiking to protect Monument objects. This could adversely affect non-motorized and non-mechanized access. Alternative E would thus have the greatest potential for impacts to non-motorized and non-mechanized access on BENM of all alternatives.

3.5.8.2.8. Cumulative Impacts

The cumulative impacts analysis area for travel, transportation, and access management is the Planning Area and lands adjacent to BENM. The cumulative impacts of past and present actions to travel, transportation, and access management in the Planning Area are captured in the description of the affected environment. RFFAs with potential to affect travel, transportation, and access management include actions that increase access and restrict or close areas to motorized access (see Appendix J). Actions that could lead to cumulative impacts would encompass other federal planning efforts, including improvements to the House on Fire Trailhead, construction of the Bluff River Trail, construction of a temporary access road to state land to drill a livestock water well at Fry Canyon, Cottonwood Wash Bridge Replacement Environmental Assessment, Mancos Mesa ROW access, reconstruction of the Utah Back Country Pilot Association Dark Canyon Airstrip, Hamburger Rock Campground improvements and expansion, Goosenecks Campgrounds and Trails expansion, improvements to Recapture Reservoir Boat Ramp, management of the Dark Canyon Wilderness/Peavine Corridor, and ongoing road maintenance. Additionally, local planning efforts would also contribute to OHV patterns in the region. Transportation and road networks adjacent to the BENM analysis area include routes maintained by other federal, state, and county agencies, and private landowners. Potential increases in visitation under all alternatives, in combination with traffic from past, present, and future projects could result in cumulative effects on travel, transportation, and access within the analysis area.

Limitations on travel, transportation, and access under Alternatives D and E have the potential to reduce cumulative impacts on ecosystems and the soundscape identified as a concern by the BEC, as described under Section 3.5.8.1.

Land management in the immediate vicinity of the Planning Area would continue under the existing 2008 Monticello and Moab RMPs and 1986 Manti-La Sal LRMP. These plans would continue to manage OHVs with impacts similar to those under Alternative A and would continue to provide access on designated and/or existing routes that connect to routes accessing areas within the Planning Area.

3.5.9. Livestock Grazing

3.5.9.1. AFFECTED ENVIRONMENT

Presidential Proclamation 10285 speaks specifically to livestock grazing:

The Secretaries shall manage livestock grazing as authorized under existing permits or leases, and subject to appropriate terms and conditions in accordance with existing laws and regulations, consistent with the care and management of the objects identified above and in Proclamation 9558. Should grazing permits or leases be voluntarily relinquished by existing holders, the Secretaries shall retire from livestock grazing the lands covered by such permits or leases pursuant to the processes of applicable law. Forage shall not be reallocated for livestock grazing purposes unless the Secretaries specifically find that such reallocation will advance the purposes of this proclamation and Proclamation 9558.

The proclamation also mentions history of livestock grazing by Navajo and Ute families and later, Anglo settlers and Hispanic sheep herders, many of whose ancestors still live in local communities today.

There are 1,356,769 acres currently associated with allotments within BENM. Approximately 71% of the allotments (by acres) fall within the Monument boundary because allotment boundaries and Monument boundaries are not the same and do not in every instance follow each other (Table 3-140 and Table 3-141). Approximately 91% of the Monument is currently available/suitable for grazing.

There are 32 allotments that fall within or overlap with the boundaries of the Monument: nine of these are administered by the USDA Forest Service and 23 are managed by the BLM. Within these 32 allotments, there are 62,035 AUMs active on the BLM allotments and 14,651 HMs permitted on USDA Forest Service allotments.²⁸ These numbers represent the number on the grazing permit and as such, the billed (BLM) and permitted (USDA Forest Service) numbers on the allotments are likely to be less than listed in Table 3-140 and Table 3-141 (Catlin et al. 2010; Tinsley 2023). The listed AUMs and HMs are for the entire allotment, including areas within and outside the BENM boundary. All the allotments that overlap the Monument graze cattle; six of the BLM allotments and four of the USDA Forest Service allotments permit horses along with cattle. Range improvements such as corrals, stock reservoirs, fencing, water troughs, and pipelines are in place throughout the Monument.

The BLM developed classification criteria to assist field offices in identifying management priorities by allotment. Allotments are placed in one of three categories—improve (I), maintain (M), or custodial (C)—based on the criteria below (BLM 1987).

Allotment categories allow the BLM to direct attention to those areas in greatest need to improve a resource or to resolve serious resource-use conflicts. Within BLM allotments that overlap with BENM, there are 22 allotments in Category I, 1 allotment in Category M, and 0 in Category C (see Table 3-140). The USDA Forest Service does not use these categories.

Category I: Allotments where current livestock grazing management or level of use on public land is, or is expected to be, a significant causal factor in the non-achievement of land health standards, or where a change in mandatory terms and conditions in the grazing authorization is or may be necessary. When identifying Category I allotments, review condition of critical habitat, conflicts with sage-grouse, and whether projects have been proposed specifically for implementing the Healthy Lands Initiative.

Category M: Allotments where land health standards are met or where livestock grazing on public land is not a significant causal factor for not meeting the standards and current livestock management is in conformance with guidelines developed by the State Directors in consultation with Resource Advisory Councils. Allotments where an evaluation of land health standards has not been completed, but existing monitoring data indicates that resource conditions are satisfactory.

Category C: Allotments where public lands produce less than 10% of the forage in the allotment or are less than 10% of the land area. An allotment should generally not be designated Category C if the public land in the allotment contains: 1) critical habitat for a threatened or endangered species, or 2) wetlands affected by livestock grazing (BLM 2017).

²⁸ AUMs are used by the BLM. HMs are used by the USDA Forest Service because the USDA Forest Service guarantees occupancy, not forage. One AUM is equal to the amount of forage necessary for the sustenance of one cow/calf pair or its equivalent for a period of 1 month. One HM is equal to 1 month's use and occupancy of the range by one cow-calf pair, one bull, or one yearling cow.

Table 3-140. BLM Allotments within Bears Ears National Monument

Allotment Name	Total Allotment Acres	Acres within BENM	BLM Acres within BENM	State Acres within BENM	Other Acres within BENM*	Percentage within BENM	Allotment Category	Active AUMs	Scheduled AUMs	Grazing Period
Comb Wash†	66,988	65,806	65,804	7,165	850	98%	Improve	734	501	11/1 - 2/28
									233	3/1 - 4/30
Cottonwood†	32,716	24,190	24,229	1,682	1,780	74%	Improve	1,434	818	10/16 - 2/28
									614	3/1 - 6/10
East League	14,165	412	411	1,639	15	3%	Improve	577	576	11/1 - 5/15
								573	581	11/1 - 5/15
								187	114	11/1 - 2/28
								72	3/1 - 5/15	
Harts Draw	28,814	12,402	12,402	1,136	79	43%	Improve	1,100	615	10/16 - 2/28
									484	3/1 - 6/15
Harts Point	17,735	8,310	8,311	1,099	0	47%	Improve	1,080	142	2/15 - 2/28
									932	3/1 - 5/31
Hatch Point	98,592	7,659	6,485	1,144	0	8%	Improve	585	587	10/15 - 6/15
								10,697	7,818	10/15 - 6/15
									2,877	11/15 - 5/31
Hurrah Pass	17,418	16,738	16,761	1,361	0	96%	Improve	262	156	11/25 - 2/28
									22	12/1 - 2/28
									75	3/1 - 4/15
									8	3/1 - 3/31
Indian Creek	227,886	227,814	227,802	18,892	5,959	100%	Improve	8,518	4,984	10/1 - 2/28
									3,532	3/1 - 6/16
Kane Springs	14,458	25	25	0	0	0%	Improve	277	225	11/1 - 3/31
								45	46	11/1 - 3/31
								35	35	11/1 - 3/31

Allotment Name	Total Allotment Acres	Acres within BENM	BLM Acres within BENM	State Acres within BENM	Other Acres within BENM*	Percentage within BENM	Allotment Category	Active AUMs	Scheduled AUMs	Grazing Period
Lake Canyon	367,819	175,216	175,208	17,642	120	48%	Improve	5,009	49	10/6 - 2/28
									32	3/1 - 6/15
									2,958	10/6 - 2/28
									1,965	3/1 - 6/15
Lockhart	38,768	38,570	38,595	6,152	2	99%	Improve	1,360	1,027	11/25 - 2/28
									332	3/1 - 3/31
Lone Cedar	18,484	3,783	3,783	399	1	20%	Improve	1,966	1,172	12/1 - 2/28
									794	3/1 - 4/30
Mccracken Wash	16,610	569	569	204	0	3%	Improve	950	544	11/15 - 2/28
									7	3/1 - 5/15
									10	11/15 - 2/28
North League	4,782	2,607	2,608	3,223	837	55%	Improve	388	390	3/1 - 5/15
									213	10/8 - 2/28
									180	3/1 - 6/30
Perkins North	56,781	56,647	56,647	5,778	1625	100%	Improve	4,626	45	10/1 - 2/28
									28	3/1 - 5/31
									2,828	10/1 - 2/28
									1,723	3/1 - 5/31
Perkins South	45,210	26,027	26,026	1,483	6	58%	Improve	2,716	1,682	10/1 - 2/28
									1,025	3/1 - 5/31
Slickhorn	128,604	128,604	128,604	9,425	647	100%	Improve	1,795	1,007	10/16 - 2/28
									792	3/1 - 6/15
Tank Bench Brushy Basin	62,053	38,062	38,062	4,800	3	61%	Improve	3,589	1,943	10/8 - 2/28
									1,646	3/1 - 6/30
Tank Draw	9,483	1,267	1,267	86	0	13%	Improve	993	592	12/1 - 2/28
									401	3/1 - 4/30

Allotment Name	Total Allotment Acres	Acres within BENM	BLM Acres within BENM	State Acres within BENM	Other Acres within BENM*	Percentage within BENM	Allotment Category	Active AUMs	Scheduled AUMs	Grazing Period
Texas-Muley	60,094	60,093	60,092	7,517	39	100%	Improve	1,960	21	11/1 - 2/28
									1,090	11/1 - 2/28
									836	3/1 - 5/31
									16	3/1 - 5/31
White Canyon	199,820	164,898	165,167	16,859	1054	83%	Improve	5,616	5,472	3/1 - 2/28
									144	3/1 - 2/28
White Mesa	50,456	14,401	14,401	1466	3	29%	Improve	4,374	36	12/1 - 2/28
									2,127	12/1 - 2/28
									36	3/1 - 5/31
									2,175	3/1 - 5/31
Windwhistle	6,292	1,126	884	238	0	18%	Maintain	631	631	11/1 - 2/28
Total	1,584,028	1,075,226	1,074,142	109,392	13,019	68%	-	62,035	62,008	-

Source: BLM and USDA Forest Service GIS (2022).

* Other landownerships include Indian Reservations, NPS, private, USDA Forest Service, and USDA Forest Service Wilderness Areas

† Comb Wash and Cottonwood have not been grazed in 20 years by choice of the permittee.

Table 3-141. USDA Forest Service Allotments within Bears Ears National Monument

Allotment Name	Allotment Acres	Acres within BENM*	Percentage within BENM	Permitted Cattle (HMs)	Permitted Horses (HMs)	Grazing Period
Babylon	41,132	41,132	100%	923	23	6/1 - 10/15
Bears Ears	15,875	15,875	100%	902	16	6/16 - 10/15
Blue Creek	30,548	24,124	79%	939	19	6/21 - 10/15
Camp Jackson	17,709	4,805	27%	1,207	–	6/16 - 10/15
Cottonwood	62,148	62,148	100%	1,742	15	6/16 - 9/15
Gooseberry	28,216	28,216	100%	901	18	6/1 - 10/15
Harts Draw	18,863	681	4%	1,105	–	6/15 - 10/16
Twin Springs	78,298	78,298	100%	2,005	48	6/6 - 10/5
West Mountain	26,265	26,264	100%	682	–	6/26 - 10/11
Total	319,054	281,543	88	10,406	139	–

Source: BLM and USDA Forest Service GIS (2022).

Note: In addition to the allotments listed above, the Chippean allotment (USDA Forest Service) was designated not suitable for grazing with a NEPA decision and has not been in use since the 1990s.

*All acres within BENM are managed by the USDA Forest Service.

Rangeland conditions correlate directly with forage health and thus the ability for grazing permittees to continue livestock grazing operations. Standards for managing for rangeland conditions differ between the two agencies, but both focus on maintaining, improving, and moving the land toward a healthy landscape through livestock management, vegetation management, and range improvements (BLM 1997; USDA Forest Service 1990). It is also based upon the analysis of rangeland conditions through monitoring, analysis of data, and the history of allotments (see Section 3.4.4).

There are many existing range improvements within BENM, including fences, cattle guards, corrals and exclosures. Table 3-142 and Table 3-143 provide full lists of types of range improvements and how many there are.

Table 3-142. Existing BLM Range Improvements, Excluding Fences

Type of Improvement	Amount
Cabin	13
Cattle guard	95
Corral	63
Exclosure	17
Guzzler	7
Reservoir	348
Spring	118
Water trough	73
Well	17
Unidentified	1
Total	1,045

Source: BLM Vegetation Management Action Portal (VMAP) database (2023).

Table 3-143. Existing Fences

Miles of Fences	Number of Fence Segments
257.67	337

Source: BLM Vegetation Management Action Portal (VMAP) database (2023).

Both the USDA Forest Service and the BLM record trend data. Both the USDA Forest Service and BLM have historical photographs and the BLM has rangeland health assessments. Additionally, the USDA Forest Service and the BLM have monitoring data. The BLM uses AIM data to record trends for terrestrial ecosystems, such as rangeland. See Section 3.4.4 for more information about terrestrial AIM data. The BLM uses lotic AIM data to record trends for aquatic ecosystems such as streams and rivers. See Section 3.4.3 for more information about lotic AIM data.

Grazing can be used as a tool to move rangelands toward desired conditions by decreasing fine fuels and invasive weeds, thus decreasing the potential for severe wildfires (BLM 2001). See Sections 3.4.4, 3.4.5, and 3.5.4 for more information on these impacts to rangeland health and livestock grazing.

Recreation use in the Monument has increased significantly in the past 20 years. As recreational use increases, the potential for conflicts between humans and livestock also increases. These conflicts include harassment of livestock by OHV use; gates being left open, leading to trespassing livestock and the potential to increase livestock death by motor vehicles; and camping near range improvements (e.g., corrals, water troughs) or within allotments that disrupt livestock operations through littering, human presence around water and supplement sources, or increased noise from campers and OHV use.

Drought conditions lead to less water availability for livestock use and potentially increase the need for permittees to supplement water for their livestock. Drought conditions also cause a decrease in plant growth, which both decreases the amount of forage available for livestock and increases the amount of bare ground, thereby increasing erosion potential from trampling.

The BLM and USDA Forest Service forecast that the demand for livestock forage and permits will remain stable due to steady demand on the Monument. The demand for other land uses, such as recreation, will likely continue to grow. This will increase the potential for livestock and user conflicts where allotments and recreation areas overlap and could result in localized impacts from conflicts with recreationists, as described above.

If drier and warmer conditions occur as predicted, it will reduce available forage and water for livestock. Therefore, further adaptive management will be required such as additional range improvements, reduced livestock numbers, shortened grazing periods, and altered grazing rotations.

A direct competition for forage and water resources is found throughout the Monument between livestock and wildlife but is most prevalent in the riparian areas, where water and forage are present or of higher quality than in uplands.

3.5.9.2. ENVIRONMENTAL CONSEQUENCES

3.5.9.2.1. Issue

- How would proposed management of Monument objects affect rangeland forage conditions and livestock grazing operations, including range improvements?

This analysis assesses the potential impacts on rangelands and livestock grazing management in all current allotments in the livestock grazing analysis area.

3.5.9.2.2. Impacts Common to All Alternatives

Under all alternatives, allotments would be managed, subject to terms and conditions, in a manner consistent with the protection of Monument objects. Such management actions would remain during times of drought. The potential for allotment closure could impact the permittee or operator by causing a decrease in AUMs or HMs allowed in their operation (see Section 3.5.5). The closure of allotments would also lead to a buildup of fine fuels, thus increasing the potential for a wildfire that would decrease productivity and increase the potential for nonnative and invasive annual grasses (Davies et al. 2010); however, under all alternatives, there is a potential for voluntary relinquishment of permits, which would reduce the total acreage available/suitable for livestock grazing. Voluntary relinquishment could also reduce AUMs under all alternatives.

The USDA Forest Service and the BLM would monitor rangeland conditions and adapt grazing practices as needed to maintain or make progress toward rangeland health standards and desired conditions. Under all alternatives, if monitoring indicates that domestic livestock grazing is adversely impacting the protection of BENM objects, appropriate changes to livestock grazing management would be implemented to mitigate those impacts in a manner that ensures protection of BENM objects. Monitoring would allow the agencies to make informed decisions about allotments and pastures and help them determine whether range improvements and water developments are protecting BENM objects. Monitoring would also be used to collect utilization data under all alternatives; utilization is the portion of forage consumed by livestock, wildlife, and insects during a specified period or the pattern of such use (43 CFR 4100.0-5). Forage utilization limitations could reduce forage availability for livestock operations as permittees would be required to remove their livestock when utilization thresholds are reached, which could impact the permittees economically (see Section 3.5.5).

Under all the alternatives, the BLM and USDA Forest Service would work with permittees and the BEC to develop and implement grazing management plans for all allotments within BENM during the scheduled permit renewal process using Traditional Ecological Knowledge where applicable and consistent with protecting BENM objects. Creating grazing management plans would help the permittees to manage their lands in a way that does not compromise Monument objects and would also help improve range conditions, thus increasing forage quality for both livestock and wildlife alike.

ROW authorizations foreseeable in areas open to ROWs or in ROW avoidance areas include, but are not limited to, construction of roads, facilities, and structures; removal or manipulation of vegetation; trampling of vegetation by overland OHV travel; and grading or excavation of the land surface. Any surface-disturbing activities within ROWs can remove or lower the quality of available forage for livestock. On a site-specific level, grazing operations could be enhanced by ROW authorizations such as road improvements or construction as these could facilitate increased access to pastures and allotments for operators. Table 3-144 shows the acreages for ROWs within the grazing allotments. Although impacts are similar between alternatives, they only differ in magnitude.

Table 3-144. Acres of Rights-of-Way within Grazing Allotments by Alternative

ROW	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open	733,349	5,477	-	-	-

ROW	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Avoidance	180,208	661,950	568,565	272,007	16,332
Exclusion	449,336	453,498	552,362	848,828	1,104,496
Special Use Avoidance Area	–	241,967	241,966	242,074	242,074
Total	1,362,892	1,362,892	1,362,892	1,362,909	1,362,902

Source: BLM and USDA Forest Service GIS (2022).

Generally, larger allocations would result in more authorized ground-disturbing activities, thus a greater potential impact on livestock grazing activities and forage. Activities that result in vegetation removal or natural surface feature disturbance could impact forage quality and availability, resulting in a potential loss of available AUMs. Areas that are managed as ROW exclusion would be subject to the fewest potential ground-disturbing activities and therefore would have the least impact to livestock grazing operations. Areas that are managed as ROW avoidance areas would have more potential for impacts to livestock grazing than ROW exclusion areas. The greatest impacts to livestock grazing would result from ground disturbance in areas that are open to ROW authorization. Although primitive and non-motorized recreation such as hiking, mountain biking, recreational shooting, and dispersed camping generally have fewer impacts than motorized recreation, shared use of rangelands can result in vegetation trampling, fragmentation, and increased weed invasion, thus lowering forage quality.

Under all alternatives, grazing is excluded from developed recreation facilities, including developed campgrounds. User-livestock conflicts could impact livestock grazing operations. For example, unlocked gates that are not secured or fence posts damaged by recreational shooting could allow cattle to escape pastures and trespass onto other lands. Recent and future recreational use increases across the Planning Area are likely to intensify conflicts among recreationists and livestock across all alternatives.

Under all alternatives, vegetation management would create short-term disturbances to the ground and forage, creating short-term impacts to livestock operations. In the long term, however, the vegetation treatments would improve the landscape and forage quality.

Manual vegetation treatments would create less ground disturbance in the short term than mechanical treatments, but both would remove forage and reduce the forage available to livestock. Both manual and mechanical treatments would improve the landscape over time and promote the growth of native and more desirable plants which in turn creates higher quality of forage for livestock (see Section 3.4.4).

3.5.9.2.3. Impacts under Alternative A

Under Alternative A, the 2008 Monticello RMP, the 2008 Moab RMP, the 2020 ROD/MMPs, and the 1986 Manti-La Sal LRMP would remain the primary management plans for BENM. The management actions from those plans for livestock grazing and management would continue to be implemented. New and existing land treatments would continue, and grazing management plans would be modified and implemented in accordance with those plans.

There would be 135,007 acres that would be unavailable/not suitable for grazing to protect BENM objects (Table 3-145; see Appendix A, Figure 2-43, Alternative A, grazing and trailing). There would be 62,035 AUMs available for grazing on BLM-administered lands and 10,659 HMs (horses and cattle) permitted on NFS lands under Alternative A. The impacts from making acres unavailable/not suitable for livestock grazing would be the same as listed in Section 3.5.9.2.2.

Table 3-145. Livestock Grazing Availability, Animal Unit Month, and Head Month Allocation by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
USDA Forest Service* acres not suitable for livestock grazing	43,309	49,345	49,345	71,579	49,345
BLM acres unavailable for livestock grazing	91,700	113,689	113,689	287,622	113,689
Trailing Only (acres)	3,952	5,218	5,218	49,890	5,218
Trailing Only/Emergency Grazing (acres)	1,277	1,277	1,277	1,277	1,277
AUM allocation for BLM allotments	62,035	62,035	62,035	56,347	62,035
HM allocation for cattle on USDA Forest Service allotments	10,520	10, 520	10, 520	7,908	10, 520
HM allocation for horses on USDA Forest Service allotments	139	139	139	104	139

Source: BLM and USDA Forest Service GIS (2022).

* Including USDA Forest Service wilderness areas.

Under Alternative A, the agencies would develop off-site water sources and range improvements. Any new range improvements would avoid construction on cultural sites and would avoid creating concentrations of livestock on cultural sites and in riparian areas. Livestock grazing and associated range improvement projects would not be allowed on the five mesa tops. The development of off-site water sources and range improvements would move livestock distribution away from sensitive riparian areas, springs, and seeps. There would be a potential for ground disturbance around the range improvements and water developments in the uplands, but the impacts would be less severe than in the riparian areas.

Under this alternative, measures, such as exclosures, would be taken to reduce trailing livestock along the length of riparian areas, and existing livestock trailing corridors where damage is occurring in riparian areas would be rehabilitated with the use of BMPs if monitoring shows that livestock caused that damage. There would be a total of 1,277 acres for trailing only and/or emergency grazing (see Table 3-145). Overall, 320 acres would be limited to trailing in what had been the Indian Creek Unit (see Appendix A, Figure 2-43, Alternative A, grazing and trailing). The avoidance and restoration of riparian livestock trailing corridors would move livestock distribution away from sensitive riparian areas, springs, and seeps. This would improve riparian health and aquatic habitat and reduce trampling and soil compaction in those sensitive areas (see Section 3.4.2, Section 3.4.3, and Section 3.4.4).

Under Alternative A, utilization levels would remain the same as indicated in the 2008 Monticello RMP, 2008 Moab RMP, 2020 ROD/MMPs, and 1986 Manti-La Sal LRMP. There would be no new impacts from utilization levels under Alternative A.

Under Alternative A, ROWs would remain the same and thus have the same impacts as discussed in Section 3.5.9.2.2. Under Alternative A, 54% of lands within the grazing allotments would be open to ROWs, whereas 13% would be avoidance areas and 33% would be exclusion areas.

Under Alternative A, recreation actions would remain the same as under the 2008 Monticello RMP, the 2008 Moab RMP, the 2020 ROD/MMPs, and the 1986 Manti-La Sal LRMP. The impacts to livestock grazing from recreation would be the same as discussed under Section 3.5.9.2.2

3.5.9.2.4. Impacts under Alternative B

Under Alternative B, 163,034 acres would be made unavailable/not suitable for livestock grazing (see Table 3-145; see Appendix A, Figure 2-44, Alternatives B, C, and E, grazing and trailing). The AUMs and HMs under Alternative B would be the same as under Alternative A. The impacts from closing acres to grazing would be the same as listed in Section 3.5.9.2.2 but would occur on a larger spatial scale than those under Alternative A. The AUMs and HMs under Alternative B would be the same as under Alternative A. Overall, the intensity and duration of grazing on these lands remaining available/suitable for grazing would effectively be the same as Alternative A because the areas made unavailable/not suitable under Alternative B are not currently being grazed by permitted livestock because of various factors (e.g., topography, lack of water, steep slopes, natural barriers, etc.). Therefore, the impacts to the grazing permit holders would also be similar to Alternative A.

Alternative B would allow for new water developments and range improvements only as needed for the orderly administration of the rangelands and if consistent with the protection of BENM objects, such as helping to further distribute livestock or move them away from BENM objects. Existing water developments and range improvements would be maintained consistent with protecting BENM objects. The potential for new range improvements and maintaining existing range improvements would be similar as Alternative A, because both alternatives allow for range improvements consistent with the protection of BENM objects.

Under Alternative B, the agencies would strive to mitigate drought impacts while promoting land health and protecting BENM objects. The annual three-phase approach, and the responsive management associated with it, could limit the effects of drought on forage. This would lessen the loss of forage and its effects on livestock; however, drought could also mean adjusting grazing practices as a response to drought, so AUMs or HMs could be reduced, season of use could be altered, and water could have to be hauled in from elsewhere. These actions would all have economic impacts to the permittee (see Section 3.5.5).

Alternative B, like Alternative A, would avoid trailing livestock along the lengths of riparian areas except in established trailing corridors. Under Alternative B, there would be 5,218 acres for trailing within BENM. Restoration and removal of livestock trailing in riparian areas would promote vegetation growth and aquatic habitat within springs and seeps and other sensitive riparian areas. The operators would have to conduct trailing in other parts of the allotments. The new locations could be less direct and would require more time to move their livestock between allotments, potentially causing an economic impact on permittees. The impacts on livestock trailing under Alternative B are the same as, and described under, Alternative E.

Utilization levels under Alternative B would remain the same as under Alternative A.

Under Alternative B, the agencies would take measures to educate the public about avoiding conflicts with livestock. The agencies would also manage livestock grazing to avoid conflicts with recreationists to the extent possible. This would lead to less livestock harassment and recreationist conflict, as well as fewer livestock that could escape through gates left open by the public and trespass on other lands. Reducing loss would cause a positive economic impact to the permittee as well.

Under Alternative B, there would be the potential to prohibit vegetation treatments and non-structural range improvements to improve forage for livestock. Impacts would be the same as described under Section 3.5.9.2.2.

Under Alternative B, less than 1% of the areas within grazing allotments would be open to ROWs, whereas 49% would be avoidance areas, and 33% would be exclusion areas; 18% of ROW acres within grazing allotments would be special use avoidance areas. Impacts would be similar to those described in Section 3.5.9.2.2 but would be considerably less than under Alternative A because of the significant decrease in open acres. Because of the low number of acres open to ROWs, the impacts to livestock would be negligible.

The closures to recreation areas under Alternative B could reduce the livestock-user interaction and conflicts that are discussed in Section 3.5.9.2.2. The impacts would be similar, but in more limited areas and less likely to occur; however, dispersed camping, hiking, OHV use, and recreational shooting would still occur and could still cause the impacts discussed in Section 3.5.9.2.2.

3.5.9.2.5. Impacts under Alternative C

Acres allocated as unavailable/not suitable for livestock grazing would be the same under Alternative C as under Alternative B (see Table 3-145; see Appendix A, Figure 2-44, Alternatives B, C, and E, grazing and trailing). Under this alternative, AUMs and HMs would be the same as under Alternative A (see Table 3-145). The impacts from closing acres to grazing would be the same as listed in Section 3.5.9.2.2 and the same as Alternative B.

Alternative C would provide for fewer opportunities than Alternatives A and B for water developments and range improvements, with new water developments and range improvements prohibited unless a primary purpose of the water development is to protect BENM objects. By maintaining existing range improvements that protect BENM objects, operators would still be able to utilize those improvements and water developments; however, with new improvements being restricted, there would be more pressure on natural water sources. Impacts from fewer range improvements and water developments would otherwise be the same as described under Alternative B; however, there would be greater impact to the operators under Alternative C. Fewer opportunities for range improvements and water developments would reduce potential tools and solutions for land managers and grazing permit holders to use range improvements to improve livestock distribution, enhance forage use patterns, and gain greater livestock control.

Under Alternative C, drought mitigation and management would be the same as described under Alternative B.

Trailing livestock under Alternative C would be the same as Alternative B.

Utilization levels under Alternative C would be identified on an allotment-specific basis, allowing for more specialized and adaptive management in response to rangeland conditions.

Under Alternative C, there would be the potential to prohibit vegetation treatments and non-structural range improvements to improve forage for livestock. Impacts would be the same as described under Section 3.5.9.2.2.

There are no acres open to ROWs within grazing allotments under Alternative C. ROW avoidance areas make up 42% under Alternative C, whereas 33% would be exclusion areas and 18% would be special use avoidance areas. Impacts would be similar to those described in Section 3.5.9.2.2, and the differences in impacts compared to Alternative B would be negligible.

Alternative C would have similar impacts to livestock grazing as Alternative A as discussed in Section 3.5.9.2.2; however, under this alternative there would be even less impact than under Alternative B from OHV use and non-motorized recreation, as both would have more restrictions under this alternative.

3.5.9.2.6. Impacts under Alternative D

Alternative D would allocate 359,201 acres as unavailable/not suitable for livestock grazing across multiple allotments (see Table 3-145; see Appendix A, Figure 2-45, Alternative D, grazing and trailing). Under this alternative, 56,347 AUMs and 8,012 HMs would be available for grazing (see Table 3-145). Reducing AUMs and HMs could cause a socioeconomic impact to the operators and surrounding communities (see Section 3.5.5). The permit holder could be forced to move a portion of their livestock to different pastures or different allotments entirely, which could mean a new grazing permit. The impacts from closing acres to grazing would be the same as listed in Section 3.5.9.2.2 but would be on a larger spatial scale than those under Alternative A. In addition, Alternative D makes numerous pastures unavailable/unsuitable for grazing on the Indian Creek, Slickhorn, White Canyon, and Comb Wash Allotments that jeopardizes or may completely eliminate the long-term validity, functionality, and operational ability of connected ranches and associated grazing permits. This is because making these pastures unavailable/unsuitable for livestock grazing curtails adaptive grazing management, limits pasture rotations particularly during the critical plant growth periods, reduces available forage (e.g., AUMs) and range infrastructure (e.g., corrals) available to the operator, and removes large sections needed for sustained economic viability on these working ranches. Making Butler Wash unavailable to grazing on the Perkins North, Tank Bench-Brushy Basin, White Mesa, and Cottonwood Allotments would have similar impacts to those described above, yet would likely still allow for continued operation of connected ranches but at reduced capacity that would limit the economic viability of these working ranches. Alternative D would also use lotic and terrestrial AIM data to aid in the determination of whether to make areas unavailable for grazing. AIM information would provide additional monitoring data to determine land conditions and make informed decisions regarding restoration and management actions.

No new water developments and range improvements would be permitted on Alternative D, thus forgoing future opportunities for adaptive management using range improvements. This would eliminate potential tools and solutions for land managers and grazing permit holders to use range improvements to improve livestock distribution, enhance forage use patterns, and gain greater livestock control.

Under Alternative D, drought mitigation and management would be as described under Alternative B.

Under Alternative D, livestock trailing along the length of riparian areas would be prohibited, and existing livestock trailing corridors where damage has occurred would be rehabilitated. Trailing would be allowed on 49,889 acres and would be managed and have the same impacts as under Alternative A, albeit on a much larger scale, and would also include trailing areas identified using AIM data.

Utilization levels under Alternative D would be the same as under Alternative A except that where utilization levels were not otherwise established, a 30% utilization level would be used until monitoring data are available to identify an appropriate, site-specific level.

Under Alternative D, there would be the potential to prohibit vegetation treatments and non-structural range improvements to improve forage for livestock. Impacts would be the same as described under Section 3.5.9.2.2.

There are no acres open to ROWs within grazing allotments under Alternative D. ROW avoidance areas would make up 18% under Alternative D, whereas 64% would be exclusion areas, and 18% would be special use avoidance areas. Impacts would be similar to those described in Section 3.5.9.2.2 and the differences in impacts compared to Alternative B would be negligible.

Alternative D would lessen the livestock-user impacts from recreational activities through more restrictive permits and reduced OHV use.

3.5.9.2.7. Impacts under Alternative E

Under this alternative, AUMs and HMs would be the same as under Alternative A (see Table 3-145). Additional actions, including prioritizing review and processing of grazing permits and leases; identifying subareas of allotments necessary for closure; reassessing stocking levels and season of use; and identifying resource thresholds, monitoring, and automatic responses related to land health and/or impacts to cultural and sacred resources could impact the permittees economically (see Section 3.5.5).

Alternative E would prohibit new water developments for livestock, and existing water developments would be removed unless they protect BENM objects. Water wells, stock tanks, and catchments that are no longer in active use would be capped or covered for safety purposes. The impacts from this action would be the same as described under Alternative C. The addition of exclosures or other physical barriers would prevent livestock from directly accessing or impairing springs, seeps, and other sensitive riparian areas, thereby reducing trampling, compaction, and sedimentation and protecting soil and rangeland resources. Additionally, the maintenance and construction of range improvements would need to meet VRM Class I and SIO Very High requirements to preserve the existing character of the landscape.

Under Alternative E, the agencies would develop a formal drought management plan that is based on the best available Western scientific information and Traditional Ecological Knowledge specific to the region. Managers would be required to use both Western science and Traditional Ecological Knowledge in management actions and documents. This would increase the tools the agencies and permittees can use in the case of drought and allow managers to tailor their actions to a site-specific situation.

Livestock trailing under Alternative E would be the same as Alternative B and result in similar impacts.

Use levels of key forage species would be identified on an allotment-specific basis and would be managed to meet goals and objectives in this plan. Because use levels would be established within 2 years after the release of this RMP/EIS, use levels may be adjusted in a more timely manner compared with Alternative A. This may result in less opportunity for permittees to graze livestock under their original permitted utilization levels; however, re-evaluating use levels within 2 years and using allotment-specific use levels would ensure timely decisions and allow for adaptive and flexible livestock management in response to localized rangeland conditions.

Under Alternative E, there would be potential closures to grazing lands based on impacts to special status species populations, habitat, connectivity, forage, or prey. Alternative E would also restrict

access to livestock grazing in precipitation catchments. This could cause economic impacts to the operators if parts of their allotments are designated unavailable/not suitable.

Under Alternative E, there would be the potential to prohibit vegetation treatments and non-structural range improvements to improve forage for livestock. Impacts would be the same as described under Section 3.5.9.2.2.

There are no acres open to ROWs within Alternative E grazing allotments. Under Alternative E, ROW avoidance areas would make up approximately 1% of allotments; ROW exclusion areas would make up approximately 81% of allotments, and approximately 18% of grazing allotments would be special use avoidance areas. Impacts would be similar to those described in Section 3.5.9.2.2.

Alternative E has further restrictions to recreational uses and has the least potential for impacts to livestock grazing. The complete prohibition of recreational shooting would eliminate impacts to livestock from that activity; however, there would still be impacts from OHV use, dispersed camping, and hiking as discussed in Section 3.5.9.2.2.

3.5.9.2.8. Cumulative Impacts

The cumulative impacts analysis area for rangeland health and livestock grazing is the Planning Area and lands adjacent to BENM. The cumulative impacts of past and present actions on rangeland health and livestock grazing in the Planning Area are captured in the description of the affected environment. Past and present actions, such as range improvements, recreational infrastructure improvement or creation, water development, and ongoing maintenance and management from past management plans, have created short-term ground disturbance and trampled forage around the construction or maintenance sites in and around each individual project area and grazing allotment where the past and present actions occur. The recreation infrastructure improvements and construction have increased recreation overall, potentially increasing human-livestock interactions within the cumulative effects analysis area.

Past and present range improvements and water development have improved management on grazing allotments by making more resources available to the permittee. Water tanks provide water to livestock in times of drought and alleviate the pressure on riparian areas, thereby reducing ground disturbance from livestock.

RFFAs (see Appendix J) include range improvements, water developments, recreation infrastructure construction and maintenance, and restoration projects, adding up to approximately 18,000 acres of disturbance, mostly from large scale restoration projects, in and around the Planning Area and grazing allotments. Although vegetation and restoration treatments could have a short-term effect on the landscape, the long-term effects would be improved rangeland conditions, including forage quality and water quality.

These effects would continue under Alternative A but would be lessened under the action alternatives as areas are made unavailable/not suitable for livestock grazing and range improvements and water developments are removed or retired.

3.5.10. Climate Change

The Intergovernmental Panel on Climate Change (IPCC) defines climate change as “a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean or the variability of its properties, and that persists for an extended period, typically decades or longer.” Climate change may be due to natural internal processes or external forces such as

changes of the solar cycles, volcanic eruptions, and persistent human-caused changes in the composition of the atmosphere or in land use (IPCC 2018).

Tribal Nations of the BEITC view climate as a physical and spiritual force in BENM, and changes in climate can affect the cultural landscape of the BENM region in both positive and negative ways (see Appendix L). From a Hopi perspective, it is crucial to discuss climate change and its effects on the environment. Hopi people believe that climate change is caused by the cumulative effect of human misuse and neglect of the environment, and land management practices, both within BENM and beyond, thus directly relate to climate (see Appendix L).

Ongoing scientific research has identified the potential impacts of GHG emissions (including carbon dioxide, methane, nitrous oxide, and several trace gases) to the global climate. Through complex interactions on a regional and global scale, these GHG emissions cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the Earth back into space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused GHG concentrations to increase dramatically, contributing to overall global climatic changes.

GHGs are necessary to life as we know it because they keep Earth's surface warmer than it otherwise would be; however, as the concentrations of these gases continue to increase in the atmosphere, Earth's temperature is climbing above past levels. Continuing a long-term warming trend, globally averaged temperatures in 2021 were 1.5° F (0.9° C) warmer than the 1951 to 1980 baseline average and 1.9° F (1.1° C) warmer than late-nineteenth-century levels, representing the start of the Industrial Revolution. Collectively, the 8 years leading up to 2021 were the warmest years since 1880, when modern recordkeeping began (National Aeronautics and Space Administration 2022).

According to the IPCC Sixth Assessment Report (AR6), compared with 1850 to 1900, global surface temperature, averaged over 2081 to 2100 is very likely to be higher by 1.8° F to 3.2° F (1.0° C–1.8° C) according to the very low GHG emissions scenario, by 3.8° F to 6.3° F (2.1° C–3.5° C) under the intermediate GHG emissions scenario, and by 5.9° F to 10.3° F (3.3° C–5.7° C) under the very high GHG emissions scenario (IPCC 2021). The annual average temperature of the contiguous United States is projected to rise throughout the century. Increases for the period of 2021 to 2050 relative to 1976 to 2005 are projected to be approximately 2.5° F (1.4° C) for a lower GHG scenario and 2.9° F (1.6° C) for a higher GHG scenario (Vose et al. 2017).

3.5.10.1. AFFECTED ENVIRONMENT

The Planning Area is within the Colorado Plateau ecoregion, which includes the southeast half of Utah, western Colorado, northern New Mexico, and northwestern Arizona. Ecoregions are large areas with similar climate where ecosystems recur in predictable patterns. The climate of most of the Colorado Plateau is classified as semiarid and varies from north to south and from low to high elevations. In the north, the climate is closely tied to that of the Great Basin, in which summers are hot, with infrequent afternoon thunderstorms that tend to occur mostly in high elevations. In the south, peak precipitation occurs in the winter and again in the summer during a distinct wet period characterized by intermittent but often intense monsoonal storms from southern weather patterns. Spring and fall are generally the driest periods. Annual precipitation amounts are less than 10 inches at the middle and lower elevations, and areas above 8,000 feet receive over 20 inches of precipitation. The few and highly scattered mountains that reach elevations near or over 11,000 feet can receive nearly 3 feet of precipitation (Bryce et al. 2012).

Temperatures also vary considerably in the ecoregion. In the southern and lower elevations, temperatures range from approximately 20° F to 25° F (-4° C to -6° C) in the winter to approximately 95° F (35° C) in the summer. At mid- and upper elevations, temperatures range from the low 60s° F and 70s° F (15° C -21° C) in the summer to the single digits and low teens ° F (-17° C to -7° C) in the winter (Bryce et al. 2012). Based on records from long-term stations, average temperatures (1991–2020) in the mountains of Utah are around 20° F during the winter months, whereas lower elevations in the southern portion of the state frequently experience days over 100° F during the summer (Frankson et al. 2022). Average annual temperature and precipitation (1991–2020) in the Planning Area are shown in Appendix A, Figure 3-41, Average annual temperature based on 30-year climate normals, and Figure 3-42, Average annual precipitation based on 30-year climate normals, respectively.

Temperatures in the southwestern region of the United States increased by 1.6° F (0.9° C) between 1901 and 2016 (Figure CLIMATE-1). The region recorded more warm nights and fewer cold nights between 1990 and 2016, including an increase of 4.1° F (2.3° C) for the coldest day of the year (Gonzalez et al. 2018). Temperatures in Utah have risen more than 2.5° F (1.4° C) since the beginning of the twentieth century. The period since 2012 has been the warmest on record for Utah, with 8 of the 10 warmest recorded years. The highest number of extremely hot days in the historical record occurred from 2000 to 2004. The state has experienced a dramatic increase in the number of very warm nights and a decrease in the number of very cold nights (BLM 2022). Annual average temperatures are projected to increase by 3.7° F (2.1° C) and 4.8° F (2.7° C) by mid-century (2036–2065) under low and high GHG scenarios, respectively (compared with 1976–2005) and by 4.9° F (2.7° C) and 8.7° F (4.8° C) by late century (2071–2100) under low and high GHG scenarios, respectively (Vose et al. 2017). The frequency and intensity of cold waves is projected to decrease, and the frequency and intensity of heat waves is projected to increase throughout the century (Vose et al. 2017).

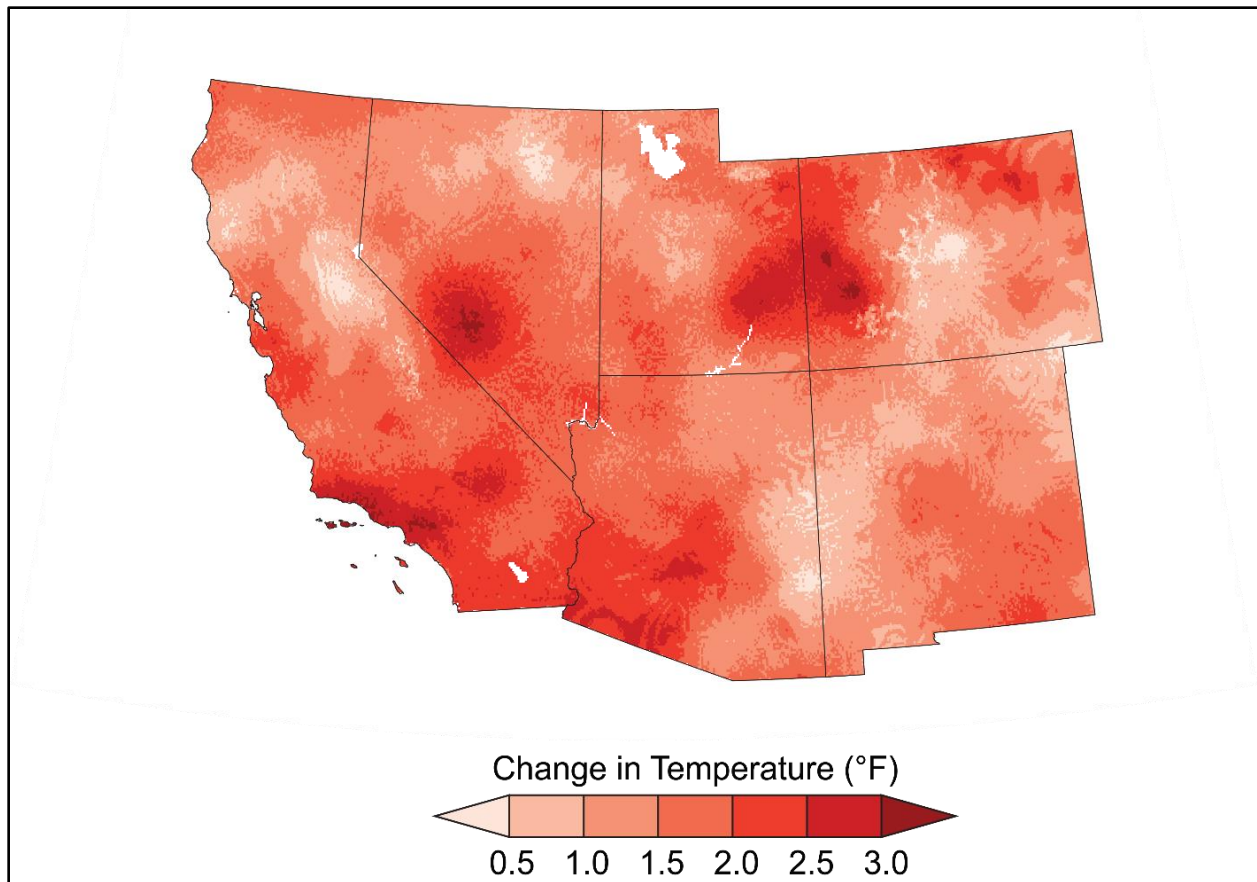


Figure CLIMATE 1. Change in temperature across the southwest region (1901–2016). (Source: Gonzalez et al. 2018.)

The Colorado Plateau ecoregion is expected to undergo general warming over the entire region, with the greatest warming occurring in the southern portion of the ecoregion and with average winter temperatures increasing more than average summer temperatures. In the northern and southern portions of the ecoregions, respectively, climate change models predict a summer temperature increase of 1.1°F (0.6°C) and 1.4°F (0.8°C) between 2015 and 2030, and an increase of 1.8°F (1.0°C) and 2.2°F (1.2°C) between 2045 and 2060 (Bryce et al. 2012). The southern portion of the ecoregion is expected to experience more extreme long-range climate change effects than the northern portion because the northern portion of the ecoregion is north of the influence of the summer monsoon and may be considered transitional to the mid- and northern latitudes, where climate change predictions may differ from those for the southwestern region (Bryce et al. 2012). Some models predict that winters in mid-latitudes will be wetter as well as warmer (Miller et al. 2011).

Precipitation projections for Utah are not consistent; although precipitation has averaged a few percent below the long-term mean across Utah, there is no statistically meaningful trend in precipitation for the state or in any climate division with natural variability resulting in both wetter and drier periods than observed in the past two decades (BLM 2022). Precipitation is expected to decline throughout much of the year during the 2015 to 2030 period (with the exception of October and December), with severe drought likely to occur in some areas. The 2045 to 2060 period would remain drier (or comparable to historic conditions) during most of the year, but sporadic wetter

months (e.g., February, June, October, and December) could result in overall increases in annual precipitation in some areas (Bryce et al. 2012).

As the state has warmed, the percentage of precipitation falling as snow during the winter and the snowpack have decreased (Frankson et al. 2022). Figure CLIMATE-2 shows that the snowpack at two locations near the Planning Area (Buckboard Flat within the Manti-La Sal National Forest and Lower Lasal Mountain located northeast of the Planning Area) have decreased between 20% and 40% during the 1955 to 2020 time period. Continuing recent trends, this will increase the likelihood that precipitation will fall as rain instead of snow, reducing water storage in the snowpack, particularly at lower elevations that are currently on the margins of reliable snowpack accumulation. Since snowmelt from the snowpack provides water for many river basins, abnormally low winter and spring precipitation can trigger drought conditions. Droughts, a natural part of Utah's climate, are expected to become more intense. The projected increase in the intensity of naturally occurring droughts will increase the occurrence and severity of wildfires. In addition, extreme precipitation is projected to increase, potentially increasing the frequency and intensity of floods (BLM 2022; Frankson et al. 2022).

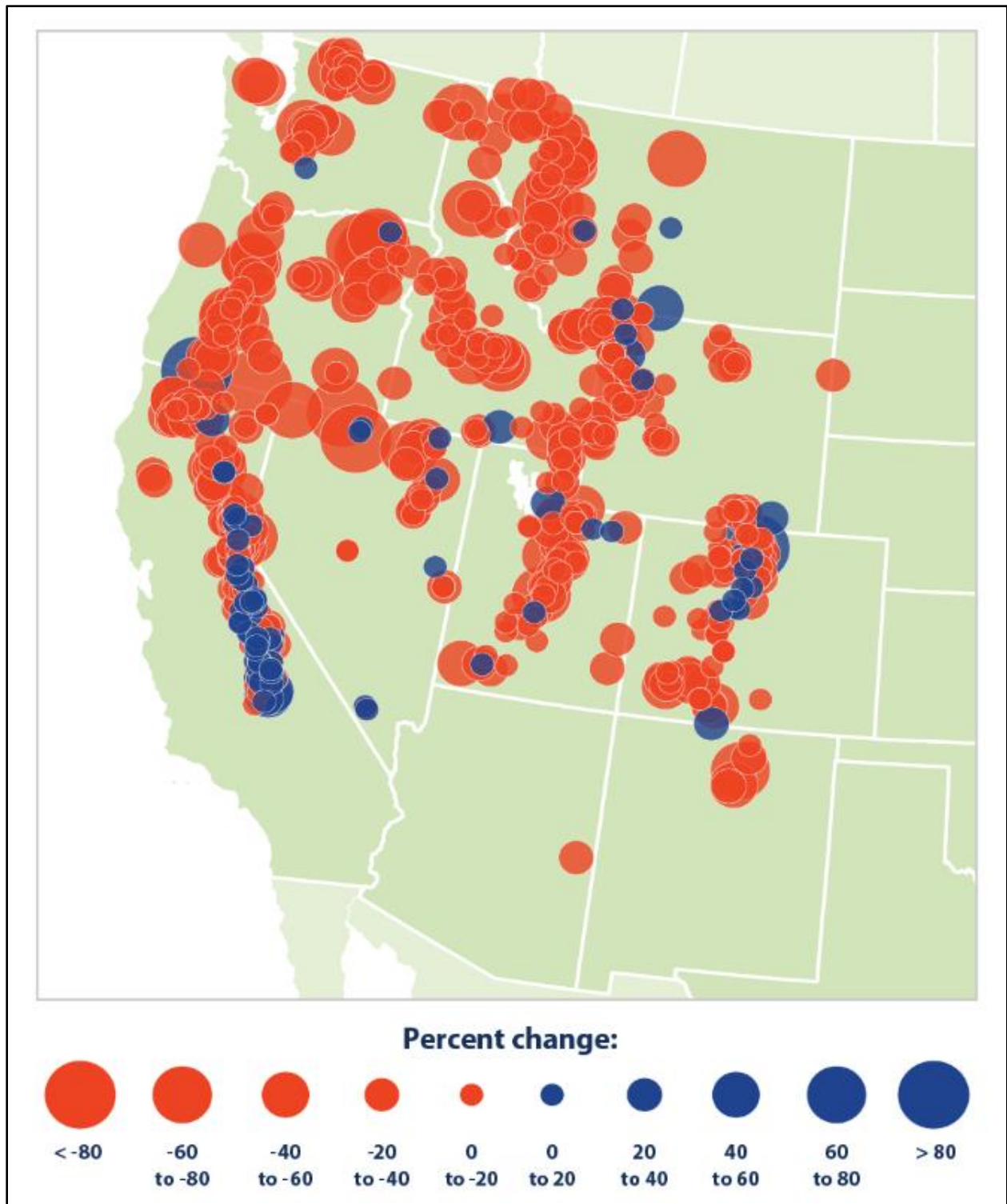


Figure CLIMATE 2. Change in snowpack across the southwest region (1955–2020) (Source: U.S. Environmental Protection Agency 2022).

The long-term potential for climate change within BENM ranges from very low to very high (Bryce et al. 2012). The northern and western portions of BENM have a lower long-term potential for climate change compared with the rest of BENM. Changes in climate have a broad range of

observed effects in the BENM region. As reported in the 2022 BEITC LMP, long-term drought and dying vegetation (including juniper [*Juniperus* sp.] trees) have been observed, resulting in increased erosion and desertification of the region. Climate change has also resulted in the changes in the range of invasive species due to climate change, particularly tamarisk and other nonnative species such as Russian olive and Chinese elm (*Ulmus parvifolia*) that consume more water than and choke out or outcompete native plant species.

In the Planning Area, as in most of the United States, GHG emissions come primarily from the combustion of fossil fuels in energy use. Energy use is largely driven by economic growth, with short-term fluctuations in its growth rate created by weather patterns that affect heating and cooling needs and changes in the fuel used in electricity generation. In 2020, carbon dioxide emissions from combustion of fossil fuel for energy production in the United States were equal to 73% of total United States anthropogenic GHG emissions) (U.S. Energy Information Administration 2022). Other major GHGs that are caused by human activity include methane and nitrous oxide. Methane, which largely comes from landfills, coal mines, oil and natural gas operations, and agricultural and livestock operations, accounted for up to 11% of total GHG emissions in 2020, and nitrous oxide, created primarily from using certain industrial and waste management processes, nitrogen fertilizers, and burning fossil fuels made up approximately 7% of total human-caused United States GHG emissions (United States Energy Information Administration 2022).

GHG emissions are offset to some degree by carbon that is sequestered in terrestrial ecosystems. Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide (e.g., in vegetation and soils). Historically, natural carbon sequestration in plants and soils has been able to lock up approximately 29% of all human-caused emissions on a global scale (Merrill et al. 2018). Terrestrial ecosystems on federal lands were estimated to have sequestered an average of 195 megatonnes²⁹ of CO₂e per year nationally between 2005 and 2014, which would, for example, offset emissions from extraction and end-use combustion of fossil fuels on federal lands by approximately 15% (BLM 2022). In Utah, the annual average sequestration was 8.6 megatonnes of CO₂e per year (Buursink et al. 2018).

Social Cost of Greenhouse Gas Emissions

The social cost of carbon, social cost of nitrous oxide, and social cost of methane—together, the social cost of GHGs (SC-GHG)—are estimates of the monetized damages associated with incremental increases in GHG emissions in a given year. It includes the estimated value of all climate change impacts, including but not limited to public health effects, changes in net agricultural productivity, property damage from increased flood risk, natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services (U.S. Interagency Working Group on the Social Cost of Greenhouse Gases [IWG] 2021).

On January 20, 2021, President Biden issued EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. Section 1 of EO 13990 establishes an administration policy to, among other things, listen to the science; improve public health and protect our environment; ensure access to clean air and water; reduce GHG emissions; and bolster resilience to the impacts of climate change. Section 2 of the EO calls for federal agencies to review existing regulations and policies issued between January 20, 2017, and January 20, 2021, for consistency with the policy articulated in the order and to take appropriate action.

Consistent with EO 13990, CEQ rescinded its 2019 *Draft National Environmental Policy Act Guidance on Considering Greenhouse Gas Emissions* and issued interim *NEPA Guidance on*

²⁹ Megatonnes = one million metric tonnes.

Consideration of Greenhouse Gas Emissions and Climate Change and held a public comment period that ended on April 10, 2023 (CEQ 2023). CEQ is issuing this guidance as interim guidance so that agencies may make use of it immediately while CEQ seeks public comment on the guidance. CEQ intends to either revise the guidance in response to public comments or finalize the interim guidance. GHG guidance, effective upon publication, builds upon and updates CEQ's 2016 *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* (2016 GHG Guidance).

Regarding the use of SG-GHGs or other monetized costs and benefits of GHGs, the 2016 GHG Guidance noted that NEPA does not require monetizing costs and benefits. It also noted that “the weighing of the merits and drawbacks of the various alternatives need not be displayed using a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”

Section 5 of EO 13990 emphasized how important it is for federal agencies to “capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account” and established the IWG. In February 2021, the IWG published *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under Executive Order 13990* (IWG 2021). This is an interim report that updated previous guidance from 2016.

In accordance with this direction, this subsection provides estimates of the monetary value of changes in GHG emissions that could result from selecting each alternative. Such analysis should not be construed to mean a cost determination is necessary to address potential impacts of GHGs associated with specific alternatives. These numbers were monetized; however, they do not constitute a complete cost-benefit analysis, nor do the SC-GHG numbers present a direct comparison with other impacts analyzed in this document. SC-GHG is provided only as a useful measure of the benefits of GHG emissions reductions to inform agency decision making.

For federal agencies, the best currently available estimates of the SC-GHG are the interim estimates of the SG-GHG developed by the IWG. Select estimates are published in the IWG's technical support document (IWG 2021), and the complete set of annual estimates is available on the Office of Management and Budget's website.³⁰ The IWG's SC-GHG estimates are based on complex models describing how GHG emissions affect global temperatures, sea level rise, and other biophysical processes; how these changes affect society through, for example, agricultural, health, or other effects; and monetary estimates of the market and nonmarket values of these effects. One key parameter in the models is the discount rate, which is used to estimate the present value of the stream of future damages associated with emissions in a particular year. A higher discount rate assumes that future benefits or costs are more heavily discounted than benefits or costs occurring in the present (that is, future benefits or costs are a less significant factor in present-day decisions). The current set of interim estimates of SC-GHG have been developed using three different annual discount rates: 2.5%, 3%, and 5% (IWG 2021).

As expected with such a complex model, there are multiple sources of uncertainty inherent in the SC-GHG estimates. Some sources of uncertainty relate to physical effects of GHG emissions, human behavior, future population growth and economic changes, and potential adaptation (IWG 2021). To better understand and communicate the quantifiable uncertainty, the IWG method generates several thousand estimates of the social cost for a specific gas, emitted in a specific year, with a specific discount rate. These estimates create a frequency distribution based on different values for key uncertain climate model parameters. The shape and characteristics of that

³⁰ <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>

frequency distribution demonstrate the magnitude of uncertainty relative to the average or expected outcome.

To further address uncertainty, the IWG recommends reporting four SC-GHG estimates in any analysis. Three of the SC-GHG estimates reflect the average damages from the multiple simulations at each of the three discount rates. The fourth value represents higher-than-expected economic impacts from climate change. Specifically, it represents the damages estimated, applying a 3% annual discount rate for future economic effects. This is a low probability, but high damage scenario, that represents an upper bound of damages within the 3% discount rate model. The estimates below follow the IWG recommendations.

3.5.10.2. ENVIRONMENTAL CONSEQUENCES

3.5.10.2.1. Issues

- How would land use allocations and discretionary uses in BENM contribute to GHG emissions?
- How would land use allocations and discretionary uses affect long-term carbon storage and sequestration in BENM?

3.5.10.2.2. Impacts Common to All Alternatives

In general, management actions that involve fuel-burning vehicles and equipment, prescribed fire, and that result in surface disturbance would impact climate change through GHG emissions and changes to carbon sequestration and storage potential of the land in the Planning Area. Major management decisions within the Planning Area that have the potential to contribute to emissions involve livestock grazing, recreation and travel management, vegetation management, prescribed fire, and forestry and woodlands. Potential impacts from emissions are based on a quantitative assessment of GHG emissions from quantifiable sources in Planning Area (Table 3-146) and qualitative discussion of the effects emissions would have on climate change. Potential GHG emissions from decisions related to forestry and wood products and their climate change impacts are discussed qualitatively.

The primary difference in GHG emissions by alternative would be due to differences in livestock grazing AUMs. GHG emissions from other sources, such as vegetation treatments, prescribed fires, and travel management, are not expected to vary substantially across the alternatives. In addition, their contributions toward total annual CO₂e emissions would be small compared with those estimated from livestock grazing AUMs under both the 100-year and 20-year time horizons.

Livestock Grazing

Livestock grazing, specifically methane emissions from enteric fermentation³¹ and manure deposition (Kauffman et al. 2022), is the dominant source of GHGs in BENM due to the stronger radiative forcing of methane, as represented by its higher global warming potential. Under all alternatives, lands covered by grazing permits or leases voluntarily relinquished by existing holders would be retired from livestock grazing in accordance with Proclamation 10285. As permits and leases are voluntarily relinquished over time, livestock grazing AUMs and associated GHG emissions would decrease.

³¹ Enteric fermentation occurs as a result of the digestive process of ruminant animals (those with multichambered stomach [rumen]) such as cattle, sheep, and deer, through microbial fermentation, which allows them to break down tough plants and grains that are not easily digestible otherwise. This process produces methane in the rumen.

As described in Section 3.4.4, although site-specific impacts could occur, livestock grazing would likely have a neutral impact on landscape-wide vegetation conditions in the Planning Area through proper management; therefore, livestock grazing under all alternatives would likely not impact carbon sequestration potential of the land in the Planning Area.

Recreation, Transportation, and Special Designations

Emissions from on-road and off-road vehicles, which are regulated by the EPA, would be a primary source of GHG emissions in the Planning Area under all alternatives. Beyond managing emissions to comply with the EPA's GHG emission regulations, the BLM's decisions would impact emissions according to differences in total miles traveled in BENM under each alternative. Direct GHG impacts from recreation and travel management in BENM include exhaust emissions from vehicles, OHVs (includes ATVs and UTVs and motorcycles), and fuel-burning equipment involved in road and facility maintenance and construction projects. Under all alternatives, the demand for recreation and OHV use is expected to continue to grow, resulting in increased recreation and travel-related GHG emissions. Recreation and travel also can result in loss of vegetation and disturbance of soils (see Section 3.4.4) that release carbon to the atmosphere. This effect would be limited, because OHV use would be closed or limited to existing routes throughout BENM under all alternatives. Furthermore, under Presidential Proclamations 9558 and 10285, new roads and motorized trails would only be constructed to protect objects in BENM and to protect public safety, which would limit the designation of new routes and the expansion of the travel network.

Prescribed Fire and Vegetation Treatments

Prescribed fire and vegetation treatments in BENM would emit GHGs under all alternatives. In addition to GHG emissions from the combustion of woody materials in prescribed fires, other sources of GHGs include fuel-burning equipment, such as hand-held equipment (e.g., chainsaws), off-road heavy equipment (e.g., masticators, dozers, or tractors), and on-road commuting vehicles used by staff to travel to the project site or transport material.

Under all alternatives, vegetation treatments and prescribed fire used to reduce fuel loads and improve vegetation conditions would reduce carbon stocks in the short term by removing vegetation and potentially disturbing soils depending on the type of treatment. This short-term reduction in carbon would be small, relative to the overall carbon stored in BENM. Over the long term, vegetation treatments and prescribed fire can maintain or increase carbon storage and sequestration by reducing the severity or extent of wildfire disturbance, which reduces acres or amount of biomass burned and carbon released through wildfire combustion (see also Section 3.4.4).

Forestry and Woodlands

Timber management, under all alternatives, would be used as appropriate to protect BENM objects. Although the lands in BENM would not be available for commercial timber production, authorizations for private use of wood products, consistent with the availability of wood products and protection of Monument objects, would continue to be issued to the public under all alternatives. Therefore, forestry and woodlands management can contribute to GHG emissions during and where on-road and off-road equipment is used to harvest wood products, particularly for commercial harvest. Emissions would also occur from the use of prescribed fire or mechanical treatments where harvest is impractical, or demand does not exist.

Timber management that removes biomass would reduce carbon stocks from BENM. Wood products that are not burned immediately would continue to provide carbon storage off Monument

for the life of their use, while biomass that is combusted would release its carbon directly to the atmosphere. Long-term effects from timber management to meet resource objectives would be as described under Prescribed Fire and Vegetation Treatments, above.

3.5.10.2.3. Impacts under Alternative A

Under Alternative A, GHGs emitted from activities authorized by agencies in the Planning Area would continue at their current levels. Table 3-146 below shows the annual estimated emissions from quantifiable sources in the Planning Area. Under current management, the primary source of methane emissions would continue to be from livestock grazing, and recreation and travel management are the dominant source of carbon dioxide emissions. A small percentage of the carbon dioxide emissions would be from prescribed fires.

Table 3-146. Annual Greenhouse Gas Emissions by Source (metric tonnes per year)

Source	Carbon Dioxide	Methane	Nitrous Oxide	AR6 100-Year CO _{2e} *	AR6 20-Year CO _{2e} †
Livestock grazing	<0.01	4,522.2	<0.01	134,761	373,079
Prescribed fires and vegetation treatments	1,197	0.8	1.52	1,636	1,680
Recreation and travel management	12,963	0.5	0.24	13,043	13,068
Total	14,160	4,523.5	1.76	149,439	387,827

Source: Emissions inventory was prepared in coordination with BLM resource specialists and based on existing historical data indicative of existing management activities under current directions (Alternative A).

* 100-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 29.8; nitrous oxide = 273 from the IPCC AR6 (IPCC 2021).

† 20-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 82.5; nitrous oxide = 273 from the IPCC AR6 (IPCC 2021).

The average annual estimated CO_{2e} from quantifiable emission-generating activities in the Planning Area comprise approximately 0.21% of Utah's total GHG emissions of 72 megatonnes of CO_{2e} in 2020 and 0.007% of United States emissions of 5,586 megatonnes of CO_{2e} in 2021 (EPA 2023). When applying the 20-year global warming potentials from the IPCC AR6, emissions from quantifiable emission-generating activities in the Planning Area are anticipated to result in 0.4 megatonnes of CO_{2e} annually. The average annual GHGs comprise approximately 0.50% of Utah's total 84 megatonnes of CO_{2e} in 2020 and 0.005% of the United States' emissions of 7,634 megatonnes of CO_{2e} in 2021.

Under Alternative A, agencies would continue to permit up to 62,035 AUMs (BLM) and 10,545 HMs (USDA Forest Service) in BENM. GHG emissions from livestock grazing emit approximately 4,522 metric tonnes of methane per year, which would contribute 90% of total estimated 100-year time horizon CO_{2e} and 96% of total estimated 20-year time horizon CO_{2e}. As described in Section 3.5.10.2.2, GHG emissions may decrease over time to the extent that permits and leases are voluntarily relinquished.

Under Alternative A, ongoing emissions would occur from recreation site maintenance and development of new sites, facilities, or trails. Encouraging the location of recreational activities near population centers and highway corridors would concentrate surface disturbance and would continue to result in improved carbon sequestration potential elsewhere within the Planning Area. GHG emissions from travel management would be as described in Section 3.5.10.2.2 and would continue to increase.

Under Alternative A, prescribed fire, vegetation management, and wood product harvest and forestry activities would continue at their current levels. Sources of GHG emissions from

implementing treatments and harvest and forestry activities would be as described in Section 3.5.10.2.2. Under Alternative A, the trends in increasing risk of uncharacteristic wildfires would continue, with the potential to emit large quantities of GHGs while fires are burning and reduce carbon stocks through damage to soils and vegetation. Because landscape-wide restoration would not be implemented under this alternative, the carbon storage and sequestration potential may be reduced.

Social Cost of Greenhouse Gas Emissions

The SC-GHGs associated with estimated emissions from quantified GHG emission sources in BENM are shown in Table 3-147. These estimates represent the present value of future market and nonmarket costs associated with carbon dioxide, methane, and nitrous oxide emissions. Estimates are calculated based on IWG estimates of SC-GHG per metric tonne of emissions for a given emissions year. The estimates assume a base year of 2022, with emissions under the RMP/EIS running from 2023 through 2045. Values have been rounded to the nearest \$1,000.

Table 3-147. Social Cost of Greenhouse Gases Associated with Estimated Emissions under Alternative A

Emission	Average, 5% (\$)	Average, 3% (\$)	Average, 2.5% (\$)	95th Percentile, 3% (\$)
CO ₂	3,942,000	15,114,000	22,929,000	45,912,000
CH ₄	62,069,000	157,534,000	212,184,000	419,687,000
N ₂ O	198,000	699,000	1,053,000	1,857,000
Total	66,209,000	173,347,000	236,166,000	467,456,000

Note: Calculated using SC-GHG per tonne from IWG (2021) and the BLM's estimates of emissions under each alternative.

3.5.10.2.4. Impacts under Alternative B

Under Alternative B, the same number of AUMs (BLM) and HMs (USDA Forest Service), as under Alternative A would result in the same amount of emissions from enteric fermentation of livestock. As described in Section 3.5.10.2.2, GHG emissions may decrease over time to the extent that permits and leases are voluntarily relinquished. An increased focus on drought mitigation under Alternative B could reduce the potential for future vegetation loss and soil damage from livestock grazing activities, helping to maintain carbon storage and sequestration potential to a small degree when compared with Alternative A.

GHG emissions from travel management would likely be the same as under Alternative A. Although 10% more acres would be closed to OHV use, overall use levels within BENM are not likely to change, and emissions based on visitation and vehicle miles traveled in BENM would be the same as under Alternative A. Closing areas to OHV use may allow for ecosystem restoration and increases in the carbon storage and sequestration potential of lands in those areas to the extent that areas are not used for non-motorized use.

Under Alternative B, vegetation management, prescribed fire, and wood product harvest and forestry activities would be implemented with the goal of returning to the natural fire return intervals and historical conditions. Under this approach, short-term emissions of GHGs from prescribed fire and fire managed to meet resource objectives could increase compared with Alternative A to the extent that such fires were conducted with more frequency. Using a landscape-wide approach for restoring natural fire return intervals and improving vegetation conditions would have indirect, long-term effects to the extent that it created more resilient vegetation communities that are less prone to wildfire when compared with Alternative A. This would reduce GHG emissions

and maintain or increase carbon storage and sequestration potential over the longer term more than under Alternative A.

Under Alternative B, the agencies would work in collaboration with the BEC, Tribal Nations, local and county government agencies, and surrounding communities to identify opportunities for climate change resilience using climate change research and Traditional Indigenous Knowledge. By taking a landscape-wide approach to management of BENM resources, the agencies may be able to manage GHG emissions more effectively and maintain or increase carbon storage potential compared with Alternative A.

Social Cost of Greenhouse Gas Emissions

Under Alternative B, the SC-GHG would be the same as the under Alternative A, where it would be \$66 million at 5% discount, \$173 million at 3% discount, and \$236 million at 2.5% discount.

3.5.10.2.5. Impacts under Alternative C

Under Alternative C, the same number of AUMs (BLM) and HMs (USDA Forest Service), as under Alternative A, would result in the same amount of emissions from enteric fermentation of livestock. As described in Section 3.5.10.2.2, GHG emissions may decrease over time to the extent that permits and leases are voluntarily relinquished. Effects related to drought mitigation would be the same as described for Alternative B.

GHG emissions from travel management would likely be the same as under Alternative A. Although 17% more acres would be closed to OHV use, overall recreation levels within BENM are not likely to change, and emissions based on visitation and vehicle miles traveled in BENM would be the same as under Alternative A. Closing areas to OHV use may allow for ecosystem restoration and increases in the carbon storage and sequestration potential of lands in those areas to the extent that areas are not used for non-motorized use similar to what was described for Alternative B.

Under Alternative C, impacts on GHG emissions and carbon storage and sequestration from vegetation management, prescribed fire, and wood product harvest and forestry activities and from taking a collaborative, landscape-wide approach would be as described under Alternative B. This alternative would reduce GHG emissions and maintain or increase carbon storage and sequestration potential over the longer term more than under Alternative A.

Social Cost of Greenhouse Gas Emissions

Under Alternative C, the SC-GHG would be the same as the under Alternative A, where it would be \$66 million at 5% discount, \$173 million at 3% discount, and \$236 million at 2.5% discount.

3.5.10.2.6. Impacts under Alternative D

Under Alternative D, 56,347 AUMs (BLM) and 7,908 HMs (USDA Forest Service) would be permitted, resulting in 12% fewer emissions from enteric fermentation of livestock than Alternative A. As described in Section 3.5.10.2.2, GHG emissions may decrease over time to the extent that permits and leases are voluntarily relinquished. Effects related to drought mitigation would be the same as described for Alternative B.

Under Alternative D, closing 40% larger areas of BENM to OHV use would likely reduce emissions based on visitation and vehicle miles traveled in BENM; however, OHV users may choose to recreate elsewhere, and total emissions (including from displaced users) may be the same as total emissions under Alternative A. The BLM does not have the information to determine exactly where

displaced OHV users may choose to recreate, and as a result, emissions cannot be quantified. Closing 72% of BENM to OHV use likely would allow for ecosystem restoration and increases in the carbon storage and sequestration potential of lands in at least some of the closed compared with Alternative A.

Under Alternative D, impacts on GHG emissions and carbon storage and sequestration from vegetation management, prescribed fire, and wood product harvest and forestry activities and from taking a collaborative, landscape-wide approach would be as described under Alternative B. This alternative would reduce GHG emissions and maintain or increase carbon storage and sequestration potential over the longer term more than under Alternative A.

Social Cost of Greenhouse Gas Emissions

Under Alternative D, the SC-GHG would be 8% less than Alternative A, where it would be \$61 million at 5% discount, \$158 million at 3% discount, and \$216 million at 2.5% discount. The changes in the SC-GHG relate to projected differences in AUMs and HMs under each alternative.

3.5.10.2.7. Impacts under Alternative E

Under Alternative E, the same number of AUMs (BLM) and HMs (USDA Forest Service) as under Alternative A would result in the same amount of emissions from enteric fermentation of livestock. As described in Section 3.5.10.2.2, GHG emissions may decrease over time to the extent that permits and leases are voluntarily relinquished. Effects related to drought mitigation would be the same as described for Alternative B.

Under Alternative E, impacts to GHG emissions and carbon storage and sequestration from travel management would likely be the same as under Alternative A. Although 10% more acres would be closed to OHV use, overall recreation levels within BENM are not likely to change, and emissions based on visitation and vehicle miles traveled in BENM would be the same as under Alternative A. The BLM does not have the information to determine exactly where displaced OHV users may choose to recreate; as a result, emissions cannot be quantified. Impacts from vegetation management, prescribed fire, and wood product harvest and forestry activities and from taking a collaborative, landscape-wide approach would be as described under Alternative B. This alternative would reduce GHG emissions and maintain or increase carbon storage and sequestration potential over the longer term more than under Alternative A.

Social Cost of Greenhouse Gas Emissions

Under Alternative E, the SC-GHG would be the same as under Alternative A.

3.5.10.2.8. Cumulative Impacts

Because climate change is a global process, the cumulative effects analysis area includes Utah, the Colorado Plateau ecoregion, the United States, and the world. Past and present actions that contribute to cumulative impacts on climate change include those that contribute to GHG emissions as well as those that remove carbon stocks and reduce carbon storage and sequestration potential. As described above, agency-authorized activities under this RMP/EIS would result in the emission of GHGs that contribute in some degree to global warming and the climate change trends discussed under Affected Environment. In the reasonably foreseeable future, several actions are expected to contribute to cumulative climate change impacts. These actions include: The House on Fire Trailhead project, encompassing a disturbance area of 2.0 acres. This project focuses on improving the parking area, with a significant portion of the work to be

conducted on slickrock surfaces. The Indian Creek Allotment Range Improvements projects, with a disturbance area of 2.5 acres. This initiative involves the construction of 13 earthen reservoirs and five rangeland fences within the Indian Creek allotment. The primary goals are to manage surface water runoff effectively, provide a reliable water supply, facilitate livestock distribution, and enhance control over grazing patterns and forage use levels. The Goosenecks and Hamburger Rock Campground projects, covering 12 acres. These projects entail the expansion of the campground facilities and the development of hiking and biking trails. Additionally, there is an expected increasing trend in OHV use and travel to the area (see Appendix J). Among the alternatives, Alternative A would contribute the most GHG emissions from recreation and transportation, vegetation treatments and prescribed fire, and livestock grazing management activities. Alternatives D and E would decrease emissions within BENM due to the closure of 75% of the Monument to OHV use; the cumulative effect would depend on the extent to which these activities were reduced rather than simple displaced in the Planning Area. The management actions under all alternatives would also contribute to cumulative effects from surface-disturbing activities which can impair carbon storage potential across the Planning Area. Over the long term, the action alternatives would have countervailing effects through vegetation management and fire and fuels management, which would maintain or increase carbon storage and sequestration potential over the long term.

3.6. Unavoidable Adverse Impacts

Section 102(c) of NEPA requires disclosure of any adverse environmental effects that cannot be avoided should the proposal be implemented. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures or impacts for which there are no mitigation measures. Some unavoidable adverse impacts occur as a result of implementing the RMP/EIS. Others are a result of public use of the public lands within the Planning Area. This section summarizes significant unavoidable impacts; discussions of the impacts of each management action (in the discussion of alternatives) provides greater information on specific unavoidable impacts.

Surface-disturbing activities that are consistent with the protection of Monument objects would result in unavoidable adverse impacts. Although these impacts would be mitigated to the extent possible, unavoidable damage would be inevitable. Long-term conversion of areas to other uses such as for livestock grazing (range improvements) or land use authorizations (utility corridors) would increase erosion and change the relative abundance of species within plant communities, the relative distribution of plant communities, and the relative occurrence of seral stages of those communities. These activities would also introduce intrusions, which could affect the visual landscape.

Unavoidable damage to cultural and paleontological resources from permitted activities could occur if resources undetected during surveys were identified during ground-disturbing activities. In these instances, standard conflict avoidance agreements would require ceasing further activities upon discovery and the resource would be mitigated to minimize data loss. Unavoidable loss of cultural and paleontological resources due to non-recognition, lack of information and documentation, erosion, wildfire, casual collection, trespass, and inadvertent destruction or use would also occur. Unavoidable damage to buried cultural resources could occur, particularly in construction situations.

Wildlife and livestock grazing would contribute to soil erosion, compaction, and vegetation loss, which could be extensive during drought cycles and dormancy periods. Conversely, unavoidable losses or damage to forage from development of resources in the Planning Area would affect

livestock and wildlife. Some level of competition for forage between these species, although mitigated to the extent possible, would be unavoidable. Instances of displacement, harassment, and injury could also occur.

Recreational activities and general use in BENM would introduce additional ignition sources into the Planning Area, which would increase the probability of wildland fire occurrence and the need for suppression activities. These activities combined with an increase in fire risks as climate trends continue and become more pronounced, would increase the potential for high-intensity wildland fires in the Planning Area. These activities could also introduce invasive and nonnative species that could alter native plant communities and wildlife habitat.

Numerous land use restrictions imposed throughout the Planning Area to protect sensitive resources and other important values, by their nature, affect the ability of individuals and groups who visit BENM. These restrictions could also require the closing of roads and trails or limiting certain modes or seasons of travel.

Although attempts would be made to minimize these impacts by limiting them to the level of protection necessary to accomplish management objectives, and providing alternative use areas for affected activities, unavoidable adverse impacts would occur under all alternatives.

3.7. Irreversible and Irretrievable Commitment of Resources

Irreversible commitments include effects that are permanent, such as species extinction, loss of cultural or paleontological sites, or permanent alteration of a waterway. Irretrievable commitments involve short-term loss that could be regained over time. Restrictions, mitigation, or permits could reduce the intensity or duration of effects. The exact nature and extent of any irreversible and irretrievable commitment of resources cannot be defined due to uncertainties of location, scale, timing, and rate of implementation; the relationship to other actions; and the effectiveness of mitigation measures throughout the life of this plan.

Implementing the RMP/EIS management actions would result in surface-disturbing activities, including permitted recreation activities, livestock grazing authorizations, and ROW development, which result in a commitment to the loss of irreversible or irretrievable resources. Surface disturbances from recreation developments, range improvements, or ROWs for roads used for recreation and public or personal access, are generally a permanent encumbrance of the land. Irretrievable effects on air or water quality, soil, vegetation, fisheries, or wildlife could result from surface disturbance from recreational use, OHV use, or wildland fires and prescribed burning. Soil erosion or the loss of productivity and soil structure might also be considered irreversible commitments of resources. Surface-disturbing activities would remove vegetation and accelerate erosion that would contribute to irreversible soil loss; however, management actions are intended to reduce the magnitude of these effects and restore some of the soil and vegetation lost. High-intensity wildfire, construction of range improvements, ROW developments, communication sites or other transportation infrastructure improvements, can also create an irretrievable loss of wildlife habitat. Laws protecting cultural and paleontological resources would provide for mitigation of irreversible and irretrievable effects on cultural resources from permitted activities.

3.8. Relationship between Local Short-Term Uses and Long-Term Productivity

This section discusses the short-term effects of the RMP/EIS alternatives versus the maintenance and enhancement of potential long-term productivity of the Planning Area's environmental resources. Short-term impacts are those that revert to pre-project conditions within a few years. Long-term impacts take longer to revert or are permanent. Because the alternatives are management actions, most effects are long term and could have beneficial or adverse effects on productivity, compared with current conditions.

Regardless of which alternative is selected, management activities would result in various short-term adverse effects, such as increased localized soil erosion, localized smoke that could affect air quality, or damage to wildlife habitat. Other short-term effects could improve long-term productivity and provide beneficial effects. Management actions would minimize the effect of short-term uses and reverse the change during the long term; however, BLM-administered and NFS lands are managed for various uses, and some long-term productivity effects might occur regardless of management approach.

CHAPTER 4. CONSULTATION AND COORDINATION

4.1. Public and Agency Involvement

4.1.1. Public Scoping

Pursuant to the BLM Handbook H-1601-1, the BLM and USDA Forest Service conducted public scoping from August 30, 2022, with the publication of the notice of intent in the *Federal Register*, through October 31, 2022, for a total of 62 days. In addition to two virtual meetings held via Zoom, public scoping meetings were held in person at Monument Valley High School in the community of Monument Valley, Utah; in Blanding, Utah; and in Albuquerque, New Mexico. In all, 15,414 comment submissions were received from the public during the scoping period. Information about scoping meetings, comments received, comment analysis, and issue development can be found in the scoping report available on the BLM's ePlanning website at <https://eplanning.blm.gov/eplanning-ui/project/2020347/510>.

4.1.2. Endangered Species Act Section 7 Compliance

The BLM and USDA Forest Service have initiated informal consultation with the USFWS. As part of that process, the USFWS was invited to review internal documents that preceded publication of this draft RMP/EIS. Information received from the USFWS, including recommended conservation measures, has been incorporated into this document. Once the proposed RMPs are identified, the agencies will determine if formal Section 7 consultation with the USFWS is necessary.

4.1.3. National Historic Preservation Act Section 106 Consultation

At the beginning of the scoping process, the BLM and USDA Forest Service notified the public that they would fulfill the public involvement requirements of the NHPA (54 USC 306108) through this NEPA process as provided for in 36 CFR 800.2(d)(3). The Utah Public Lands Policy Coordinating Office has participated in development of this draft RMP/EIS as a cooperating agency. This has afforded the SHPO with the opportunity to review internal documents that preceded publication of this draft RMP/EIS, including the alternatives and environmental analysis. Information submitted by the SHPO, through Utah Public Lands Policy Coordinating Office, has been incorporated into the document, as appropriate.

The agencies invited 27 consulting parties, 32 Tribal Nations, and the Utah SHPO to consult on the BENM RMP/EIS. The agencies also invited the Advisory Council on Historic Preservation to participate in the BENM RMP/EIS and they elected to participate. The agencies held a meeting during scoping with the Utah SHPO, Advisory Council on Historic Preservation, and consulting parties during scoping to gather initial input on the BENM RMP/EIS and seek input on cultural resources in the Planning Area and provide an overview of planning and known cultural resources. The agencies had a separate meeting with Tribal Nations during scoping and covered similar topics. The agencies will continue to consult with Tribal Nations, the Utah SHPO, the Advisory Council on Historic Preservation, and consulting parties throughout the development of the BENM RMP/EIS.

4.1.4. Government-to-Government Consultation

The agencies invited 32 Tribal Nations to consult on the BENM RMP/EIS. The agencies held a meeting with Tribal Nations during scoping and sought input on cultural resources in the Planning Area and also gave an overview of the planning process and known cultural resources. The

agencies also met individually with the Pueblo of San Felipe during scoping to discuss BENM and the RMP/EIS. The agencies will continue to consult with Tribal Nations throughout the development of the BENM RMP/EIS.

4.2. Bears Ears Commission

In recognition of the importance of Tribal knowledge about the lands and objects within the boundaries defined by Proclamation 10285, and to ensure that management decisions affecting the Monument reflect the expertise and traditional and historical knowledge of interested Tribal Nations and people, Proclamation 10285 re-established the BEC in accordance with the terms, conditions, and obligations set forth in Proclamation 9558. The BEC consists of one elected officer each from the Hopi Tribe, Navajo Nation, Ute Mountain Ute Tribe, Ute Indian Tribe of the Uintah and Ouray Reservation, and Pueblo of Zuni, designated by the officers' respective Tribal Nations. Proclamation 10285, which incorporates Proclamation 9558, further requires the BLM and USDA Forest Service to meaningfully engage with the BEC regarding the development of the management plan and to inform management of BENM.

In June 2022, in recognition of the importance of Tribal Indigenous Knowledge about the lands and objects within the Monument's boundaries, the BLM and USDA Forest Service entered into an Inter-Governmental Cooperative Agreement with the BEC representatives that addresses co-stewardship of BENM. In accordance with that agreement, the BLM and USDA Forest Service have closely integrated the BEC in the preparation of this draft RMP/EIS. This integration and coordination has included attending weekly and biweekly management and planning meetings, providing input on the implementation of the scoping process, developing alternatives, assisting in the preparation of draft documents, reviewing documents, and accepting revisions for finalized documents.

The BLM and USDA Forest Service drafted a Tribal Nations Collaboration Framework (see Appendix C) to provide structure and meaning to future collaboration and consultation with the BEC and interested Tribes as the agencies move toward final planning and establishment of the RMP/EIS.

4.3. Cooperating Agencies

Federal regulations authorize the BLM and USDA Forest Service to invite eligible federal agencies, state and local governments, and federally recognized Tribal Nations to participate as cooperating agencies when drafting an RMP/EIS. To serve as a cooperating agency, the potential agency or government entity must have either jurisdiction by law or special expertise relevant to the environmental analysis.

The entities listed in Table 4-1 and Table 4-2 were invited to participate in the preparation of the draft RMP/EIS as cooperating agencies. The agencies invited 14 non-Tribal entities and signed memoranda of understanding with eight of those entities. The agencies invited 34 Tribal entities and signed a memorandum of understanding with one.

Table 4-1. Non-Tribal Cooperating Agency Outreach, Status, and Agreement

Agency/Entity	Memorandum of Understanding Signed
City of Blanding	Yes
City of Monticello	Yes

Agency/Entity	Memorandum of Understanding Signed
NPS	Yes
San Juan County, Utah	Yes
Town of Bluff	Yes
Public Lands Policy Coordinating Office	Yes
Utah Trust Lands Administration	Yes
Bureau of Reclamation	No Response
Utah State Historic Preservation Office	No Response
U.S. Environmental Protection Agency	No Response
U.S. Army Corps of Engineers	No Response
U.S. Department of Energy	No Response
U.S. Fish and Wildlife Service	No Response
Grand County, Utah	Yes

Table 4-2. Tribal Cooperating Agency Outreach, Status, and Agreement

Tribe (addressee)	Memorandum of Understanding Signed
Colorado River Indian Tribes	No Response
Confederated Tribes of the Goshute	No Response
Kaibab Band of Paiute Indians	No Response
Navajo Nation	No Response
Northwest Band of Shoshone Nation	No Response
Ohkay Owingeh	No Response
Paiute Indian Tribe of Utah	No Response
Pueblo of Acoma	No
Pueblo of Cochiti	No Response
Pueblo of Isleta	No Response
Pueblo of Jemez	No Response
Pueblo of Kewa (Santo Domingo)	No Response
Pueblo of Laguna	No Response
Pueblo of Nambe	No Response
Pueblo of Picuris	No Response
Pueblo of Pojoaque	No Response
Pueblo of San Felipe	No Response
Pueblo of San Ildefonso	No Response
Pueblo of Sandia	No Response
Pueblo of Santa Ana	No Response
Pueblo of Santa Clara	No Response
Pueblo of Taos	No Response
Pueblo of Tesuque	No Response

Tribe (addressee)	Memorandum of Understanding Signed
Pueblo of Ysleta del Sur	No Response
Pueblo of Zia	No Response
Pueblo of Zuni	No Response
San Juan Southern Paiute Tribe	No Response
Skull Valley Band of Goshute Indians	No Response
Southern Ute Tribe	No Response
The Hopi Tribe	Yes
The Ute Indian Tribe	No Response
Ute Mountain Ute Tribe	No Response
Ute Mountain Ute Tribe, White Mesa Community	No
Ysleta del Sur Pueblo	No Response

The BLM and USDA Forest Service worked closely with the cooperating agencies to develop alternatives and guide the analysis contained in the draft RMP/EIS. This process included a review of the issues raised during scoping, reviews of alternatives, and reviews of the analysis contained in the draft RMP/EIS. Cooperating agency involvement was initiated during the scoping process and has continued throughout the publication of the draft RMP/EIS. The agencies have held six meetings with cooperating agencies.

4.4. Monument Advisory Committee

Presidential Proclamation 9558, which is incorporated into Presidential Proclamation 10285, provides that “The Secretaries, through the BLM and USDA Forest Service, shall establish an advisory committee under the Federal Advisory Committee Act (5 USC App) to provide information and advice regarding the development of the management plan and, as appropriate, management of the monument.” The MAC’s charter was signed on August 24, 2018, and established a 15-member committee that includes state and local government officials, Tribal members, representatives of the recreation community, local business owners, and private landowners in compliance with Proclamation 9558. A call for nominations was published in the *Federal Register* on August 30, 2018. The Secretary of the Interior appointed the MAC’s members on April 11, 2019, and a notice of public meeting for the MAC was published in the *Federal Register* on May 3, 2019. The first MAC meeting was held on June 5 and 6, 2019.

The agencies have met with the MAC during preparation of this draft RMP/EIS. In June 2022, the BLM and USDA Forest Service met with the MAC to discuss their participation in the RMP/EIS process and to discuss the analysis of the management situation and draft alternatives development process.

The BLM and USDA Forest Service met with the MAC in September 2022 to provide an overview of the scoping process and facilitate identification and discussion of potential issues the RMP/EIS should consider. The December 2022 MAC meeting included an overview of the results of scoping and the assessment of the management situation, as well as potential alternatives that could inform the RMP/EIS. During the June 2023 meeting, the BLM and USDA Forest Service staffs hosted the committee at the Butler Wash Developed Site, the Kigalia Guard Station, and the Bears Ears Buttes to discuss permitting, interpretive projects/partnerships, management, recreation, USDA Forest Service projects, and fuels treatments.

4.5. Distribution of the Resource Management Plan/Environmental Impact Statement

An administrative draft RMP/EIS was prepared by the BLM and USDA Forest Service and distributed to the BEC and cooperating agencies for review. The BLM and USDA Forest Service made changes to the draft RMP/EIS in response to the comments received from the BEC and cooperating agencies. After the BEC and cooperating agencies' comments on the administrative draft RMP/EIS were addressed, the BLM and the USDA Forest Service provided notice regarding draft RMP/EIS publication and distributed the document to the agencies and organizations who expressed an interest in the planning process, including the cooperating agencies and Tribal Nations listed in Table 4-1 and Table 4-2. A notice that the document was available for review was also posted on the BLM's ePlanning website and in the *Federal Register*. A complete mailing and distribution list for the RMP/EIS is available in the Administrative Record at the Monticello FO.

4.6. List of Preparers

This draft RMP/EIS was prepared by an interdisciplinary team of staff from the BLM and USDA Forest Service, with assistance from the BEC and SWCA Environmental Consultants, and their subconsultants. A list of the names and roles/responsibilities of the preparers is provided in Table 4-3.

Table 4-3. List of Preparers

Name	Agency/Consultant	Qualified Role and Responsibility
Governor Arden Kucate	BEC	Pueblo of Zuni Governor, Bears Ears Commission
Craig Andrews	BEC	Vice Chairman of The Hopi Tribe and Bears Ears Commissioner
Malcom Lehi	BEC	Ute Mountain Tribe, White Mesa Councilman, Bears Ears Commissioner
Christopher Tabbee	BEC	Ute Indian Tribe, Vice-Chairman, Ute Indian Tribe Business Committee, Bears Ears Commissioner
Curtis Yanito	BEC	Council Delegate for Mexican Water, To'likan, Teenospos, Aneth, Red Mesa, Navajo Nation and Bears Ears Commissioner
Edward Wemytewa	Pueblo of Zuni	Council Member
Former Lt. Governor Carlton Bowekaty	Pueblo of Zuni	Former Lieutenant Governor
Former Governor Val Panteah	Pueblo of Zuni	Former Governor
Octavius Seowtewa	Pueblo of Zuni	Zuni Cultural Resource Advisory Task Team
Presley Haskie	Pueblo of Zuni	Zuni Cultural Resource Advisory Task Team
Alex Seowtewa	Pueblo of Zuni	Zuni Cultural Resource Advisory Task Team
Michael Gchachu	Pueblo of Zuni	Zuni Cultural Resource Advisory Task Team
Gilbert Yuselew	Pueblo of Zuni	Zuni Cultural Resource Advisory Task Team
Kurt Dongoske	Pueblo of Zuni	Zuni Tribal Historic Preservation Officer
Curtis Quam	Pueblo of Zuni	Zuni Tribal Historic Preservation Officer
Betsy Chapoose	Ute Indian Tribe	BEC Subcommittee, Cultural Resources and Protection Director
Terry Knight	Ute Mountain Tribe	Tribal Historic Preservation Officer

Name	Agency/Consultant	Qualified Role and Responsibility
Richard Begay	Navajo Nation	Navajo Nation Tribal Historic Preservation Officer
Tim Begay	Navajo Nation	Traditional Cultural Specialist, Navajo Nation Tribal Historic Preservation Officer
Olsen John	Navajo Nation	Archaeologist, Navajo Nation Tribal Historic Preservation Officer
Tamara Billie	Navajo Nation	Senior Archaeologist, Navajo Nation Tribal Historic Preservation Officer
Hank Stevens	Navajo Nation	Former Bears Ears Commissioner
Willie Greyeyes	Navajo Nation	Navajo Nation Cultural Resources Subcommittee member
James Adakai	Navajo Nation	Navajo Nation Representative
Davina Smith	Navajo Nation	Navajo Nation Representative
Gregory Sheehan	BLM	Utah State Director
Matt Preston	BLM	Deputy State Director, Resources
Jamie Poole	BLM	Natural Resource Litigation Advisor
Nicollee Gaddis-Wyatt	BLM	District Manager
Scott Whitesides	BLM	COR/Planning and Environmental Policy Analyst
Jill Stephenson	BLM	Project Manager
Emilee Helton	BLM	Planning and Environmental Specialist
Jacob Palma	BLM	Monticello Field Office Manager
Jared Lundell	BLM	Assistant Field Manager for Cultural Resources and Planning
Tina Marian	BLM	Assistant Field Manager, resources; Soils and Biological Soil Crusts Lead; Terrestrial Habitat, Vegetation Resilience and Conservation; Noxious Weeds and Invasive Nonnative Plants; Wildlife and Fisheries; Rangeland Health and Livestock Grazing Management
Rachel Wootton	BLM	Public Affairs Specialist
Temujene Makua	BLM	CO
Tia Arbogast	BLM	P&EC and back-up COR
Elizabeth Lament	BLM	GIS Specialist
Robert James	BLM	Paleontology and Geology
Phil Gensler	BLM	Paleontology and Geology
Jed Carling	BLM	Soils and Biological Soil Crusts; Terrestrial Habitat, Vegetation Resilience and Conservation; Noxious Weeds and Invasive Nonnative Plants; Rangeland Health and Livestock Grazing Management Lead
Ann Marie Aubrey	BLM	Hydrology Lead
Leslie Gonyer	BLM	Hydrology
Gabe Bissonette	BLM	Terrestrial Habitat; Vegetation Resilience and Conservation; Wildlife and Fisheries
Melissa Wardle	BLM	Terrestrial Habitat, Vegetation Resilience and Conservation; Wildlife and Fisheries; Woodlands
Josh Relph	BLM	Terrestrial Habitat, Vegetation Resilience and Conservation; Forestry and Woodlands
Ann Marie Aubry	BLM	Terrestrial Habitat, Vegetation Resilience and Conservation

Name	Agency/Consultant	Qualified Role and Responsibility
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Misti Haines	BLM	Lands with Wilderness Characteristics; Special Land Designations; Recreation Use and Visitor Services Lead; Travel, Transportation, and Access Management
Erik Vernon	BLM	Air Quality; Climate Change
Jared Lundell	BLM	Cultural Resource Management, Indigenous Peoples' Religious Concerns, and Tribal Use Lead
Shirley Cloud Lane	BLM	Cultural Resource Management, Indigenous Peoples' Religious Concerns, and Tribal Use
Bill Stevens	BLM	Environmental Justice and Social and Economic Values
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Orlando Cortez Monticello Ranger District	USDA Forest Service	Deputy District Ranger
Christopher Kramb	USDA Forest Service	Natural Resources Planner and Project Manager
William Otto	USDA Forest Service	Paleontology and Geology
Daniel Lay	USDA Forest Service	Soils and Biological Soil Crusts; Hydrology; Terrestrial Habitat, Vegetation Resilience and Conservation
Christina Tinsley	USDA Forest Service	Soils and Biological Soil Crusts; Terrestrial Habitat, Vegetation Resilience and Conservation; Noxious Weeds and Invasive Nonnative Plants; Rangeland Health and Livestock Grazing Management Lead
Barb Smith	USDA Forest Service	Terrestrial Habitat, Vegetation Resilience and Conservation; Noxious Weeds and Invasive Nonnative Plants; Wildlife and Fisheries
Brian Murdock	USDA Forest Service	Special Land Designations; Landscape Characteristics; Recreation Use and Visitor Services Lead; Travel, Transportation, and Access Management
Corey Farnsworth	USDA Forest Service	Noxious Weeds and Invasive Nonnative Plants; Rangeland Health and Livestock Grazing Management
Russ Bigelow	USDA Forest Service	Forestry and Woodlands; Fuels, Wildfire, and Prescribed Fire
Charmaine Thompson	USDA Forest Service	Cultural Resource Management, Indigenous Peoples' Religious Concerns, and Tribal Use Lead
Allison Aakre	USDA Forest Service	Cultural Resource Management, Indigenous Peoples' Religious Concerns, and Tribal Use
Sarah Herrera	USDA Forest Service	Cultural Resource Management, Indigenous Peoples' Religious Concerns, and Tribal Use
Trisha Jensen	USDA Forest Service	Lands and Realty
Zach Lowe	USDA Forest Service	Recreation Use and Visitor Services
Andy Spellmeyer	USDA Forest Service	Rangeland Health and Livestock Grazing Management Lead
Matthew Meccariello	USDA Forest Service	Rangeland Health and Livestock Grazing Management

Name	Agency/Consultant	Qualified Role and Responsibility
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Matt Westover	SWCA	APM
Emma Clinton	SWCA	Project Coordinator
Matt Petersen	SWCA	NEPA Advisor and Alternatives Facilitator
Reid Persing	SWCA	2020 BENM MMPs/EIS Advisor
Kelly Beck	SWCA	Cultural Resources, Tribal Interests, and Section 106 Lead; Cultural Resource Management, Indigenous Peoples' Religious Concerns, and Tribal Use Lead
Bryan Klyse	SWCA	Resources Team Lead; Lands and Realty Lead; ACECs Lead
Bill Spain	SWCA	Resource Uses; Special Designations; Recreation Team Lead
Erik Anderson	SWCA	NEPA Lead
Mandy Bengtson	SWCA	Soils and Biological Soil Crusts Lead
Lili Perreault	SWCA	Soils and Biological Soil Crusts
Julia Aaronson	SWCA	Soils and Biological Soil Crusts; Terrestrial Habitat, Vegetation Resilience and Conservation; Noxious Weeds and Invasive Nonnative Plants
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Arianna Disser	SWCA	Hydrology
Audrey McCulley	SWCA	Terrestrial Habitat, Vegetation Resilience and Conservation Lead; Noxious Weeds and Invasive Nonnative Plants Lead
Brooke Crockett	SWCA	Forestry and Woodlands
Sean Cottle	SWCA	Lands with Wilderness Characteristics Lead
Bryan Klyse	SWCA	Special Land Designations (ACECs) Lead; Lands and Realty Lead
Emma Clinton	SWCA	Special Land Designations (ACECs); Recreation Use and Visitor Services
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Name	Agency/Consultant	Qualified Role and Responsibility
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Kimberly Proa	SWCA	Publications Specialist
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Clayton McGee	EMPSi	Special Land Designations (WSRs)
Sean Cottle	EMPSi	Special Land Designations (Wilderness and WSAs) Lead
David Jaeger	EMPSi	Special Land Designations (Wilderness and WSAs)
Amy Cordle	EMPSi	Project Manager; Air Quality Lead; Climate Change Lead
Shine Roshan	EMPSi	Air Quality and Climate Change
Camila Reiswig	EMPSi	Environmental Justice and Social and Economic Values
Noelle Crowley	EMPSi	Travel, Transportation, and Access Management
Liza Schill	EMPSi	Rangeland Health and Livestock Grazing Management

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