U.S. Department of the Interior
Bureau of Land Management

Utah

Grand Staircase-Escalante National Monument and Kanab-Escalante Planning Area Proposed Resource Management Plans and Final Environmental Impact Statement

Volume I (Chapters 1–4)

Estimated Total Lead Agency Costs Associated with Developing and Producing this Document: $2,303,000

August 2019

BLM Mission

It is the mission of the Bureau of Land Management to sustain health, diversity, and productivity of the public lands for use and enjoyment of present and future generations.

Volume 1 of 2

Grand Staircase-Escalante National Monument and Kanab-Escalante Planning Area Proposed Resource Management Plans and Final Environmental Impact Statement

Volume 1 of 2

Chapters 1–4

U.S. Department of the Interior
Bureau of Land Management
Grand Staircase Escalante National Monument, Utah

August 2019

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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http://www.blm.gov/utah

In Reply Refer To:
1610
(UT-935)

Dear Reader:

Enclosed is the Proposed Resource Management Plans (RMP) and Final Environmental Impact Statement (EIS) for the three units of Grand Staircase-Escalante National Monument (GSENM)—Grand Staircase, Kaiparowits, and Escalante Canyons Units—and the lands excluded from the monument by Presidential Proclamation 9682, referred to as the Kanab-Escalante Planning Area (KEPA). The Proposed RMPs/Final EIS was prepared by the Bureau of Land Management (BLM) pursuant to the BLM land use planning regulations (43 Code of Federal Regulations [CFR]1600) and the National Environmental Policy Act of 1969. The BLM is proposing to adopt RMPs to revise the existing Grand Staircase-Escalante National Monument Management Plan.

President Clinton established GSENM by Presidential Proclamation 6920 on September 18, 1996. On December 4, 2017, President Trump issued Proclamation 9682, which modified the boundaries of GSENM, and modified and clarified the management direction for the monument. The modified boundaries of GSENM exclude from designation and reservation approximately 861,974 acres of land and release the lands for multiple-use management. Lands that remain part of GSENM are included in three units, known as the Grand Staircase (209,993 acres), Kaiparowits (551,034 acres), and Escalante Canyons (242,836 acres) Units.

In developing the Proposed RMPs/Final EIS, the BLM has developed a range of options to resolve resource conflicts. The BLM has done this by considering (1) issues raised through public scoping and consultation and coordination with cooperating agencies, (2) issues raised by agency resource specialists, and (3) applicable planning criteria. This process has resulted in the development of four alternatives, along with the No Action Alternative, which represents a continuation of current management. These alternatives are described in their entirety in Chapter 2 of the Proposed RMPs/Final EIS. Alternative E represents the BLM's Proposed RMPs. Identification of the Proposed RMPs does not constitute a final decision on the part of the BLM. Chapter 3 presents the affected environment and analyzes the potential impacts on resources or resource uses from implementation of the alternatives. Chapter 4 describes the BLM's consultation and coordination efforts throughout the process.

Changes between the Draft RMPs/EIS and the Proposed RMPs/Final EIS include the development of Alternative E, modifications and clarifications of the analysis contained in the Draft RMPs/EIS, the addition of the analysis of potential impacts from Alternative E, a summary of comments received during the public review period for the Draft RMPs/EIS, and responses to the comments received during the Draft RMPs/EIS public review period. These changes are indicated by gray shading in Chapters 1 through 4 and Appendices A through W in the Proposed RMPs/Final EIS.

The Proposed RMPs/Final EIS are available on the project website at: https://go.usa.gov/xVCGJ. Hard copies are also available for public inspection at BLM offices within the Planning Area.

The RMPs include land use planning actions. A person who meets the conditions outlined in 43 CFR 1610.5-2 and wishes to file a protest must do so within 30 days of the date that the U.S. Environmental Protection Agency publishes its Notice of Availability in the *Federal Register*. Instructions for filing a protest with the Director of the BLM regarding the Proposed RMPs may be found online at https://www.blm.gov/filing-a-plan-protest and at 43 CFR 1610.5-2.

In addition, pursuant to the John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 (Dingell Act, PL 116-9, Section 4103), the BLM is announcing the opening of a 60-day comment period on the proposed closure of target shooting on certain BLM-administered surface lands within GSENM and KEPA. As proposed, target shooting would generally be allowed, but would be prohibited within at least 0.25 mile of residences, campgrounds, and developed recreation facilities. The BLM is only accepting comments regarding the proposed target shooting closure. Any such comments must be received within 60 days of the date the Notice of Availability for the GSENM and KEPA Proposed RMPs/Final EIS is published in the *Federal Register*. Written comments may be submitted as follows (submittal of electronic comments is encouraged):

- Email: BLM_UT_CCD_monuments@blm.gov
- Mail: BLM, Kanab Field Office, 669 South Highway 89A, Kanab, UT 84741, Attn: Harry Barber

Before including your address, telephone number, email address, or other personally identifying information in your protest or comment, be advised that your entire protest—including your personally identifying information—may be made publicly available at any time. You may request that the BLM withhold your personally identifying information from public review, but we cannot guarantee we will be able to do so.

The BLM Director will render a written decision on each protest. The decision will be mailed to the protesting party. The decision of the BLM Director shall be the final decision of the Department of the Interior on each protest. Responses to protest issues will be compiled and formalized in a Director's Protest Resolution Report made available following issuance of the decisions. Upon resolution of all protests, the BLM will issue a Record of Decision (ROD) and Approved RMPs. The ROD and Approved RMPs will be made available electronically on the BLM's ePlanning website.

Thank you for your continued interest in the GSENM-KEPA RMPs/EIS. We appreciate the information and suggestions you contribute to the process.

Sincerely,

Edwin L. Roberson

State Director

Abstract

Lead Agency: U.S. Department of the Interior, Bureau of Land Management

Type of Action: Proposed Resource Management Plans

Jurisdiction: Portions of Kane and Garfield Counties, Utah

Abstract: This Final Environmental Impact Statement (EIS) analyzes the environmental impacts for four distinct Resource Management Plans (RMPs): an RMP for each of the Grand Staircase-Escalante National Monument (GSENM) units—Grand Staircase, Kaiparowits, and Escalante Canyons—and an RMP for Federal lands previously included in the monument that were excluded from the boundaries by Presidential Proclamation 9682 (i.e., Kanab-Escalante Planning Area [KEPA] lands).

The Planning Area encompasses approximately 1.86 million acres of Federal land, including lands originally designated under Presidential Proclamation 6920 on September 18, 1996, and lands added to the monument through subsequent legislated boundary adjustments and land exchanges. On December 4, 2017, President Trump issued Presidential Proclamation 9682 modifying GSENM and excluding from designation and reservation approximately 861,974 acres of Bureau of Land Management (BLM)-administered surface land. Lands that remain part of GSENM (1,003,863 acres) are included in three units, known as the Grand Staircase (209,993 acres), Kaiparowits (551,034 acres), and Escalante Canyons (242,836 acres) Units. KEPA is composed of Federal lands that Presidential Proclamation 9682 excluded from the national monument (861,974 acres).

The preparation of RMPs for each of the three units in GSENM is required by Presidential Proclamation 9682, which modified the boundaries of GSENM and modified and clarified the management direction for the monument. The BLM has determined that in light of the modifications included in Presidential Proclamation 9682 and other changed conditions since the preparation of the existing GSENM Approved Monument Management Plan and Record of Decision (2000), a new RMP is also needed to provide appropriate management actions for lands that are no longer part of the national monument (i.e., KEPA).

To assist the agency decisionmaker, cooperating agencies, and the public in focusing on appropriate solutions to planning issues, the Final EIS considers five alternatives for each RMP. Alternative A is the no action alternative and is the continuation of existing management under the GSENM Monument Management Plan (BLM 2000) to the extent that it is consistent with Presidential Proclamation 9682. Alternative B emphasizes conservation of physical, biological, heritage, and visual resources, and lands with wilderness characteristics, with constraints on resource uses. Alternative C emphasizes reasonable constraints on resource uses to reduce impacts on resource values. Constraints under Alternative C balance the need to maintain areas as open and available for multiple uses with the need to conserve land for physical, biological, and cultural resources. Alternative D, the BLM's Preferred Alternative in the Draft RMPs/EIS, emphasizes resource uses and reduces constraints while ensuring the proper care and management of monument objects and maintaining compliance with existing laws and regulations designed to protect physical, biological, heritage, and visual resources. Alternative E represents the BLM's Proposed Plans. Alternative E was developed in response to comments received on the Draft RMPs/EIS, recommendations and input from the Utah Resource Advisory Council, and cooperating agency input. Similar to Alternative D, Alternative E would emphasize resource use and reduce constraints while ensuring the proper care and management of monument objects. Unlike Alternative D, Alternative E includes five SRMAs, two ERMAs, and

nine RMZs. Alternative E also includes a small off-highway vehicle closed area for No Man's Mesa Research Natural Area and allows more flexibility for group size limitations in certain areas for the protection of other resources. In addition, Alternative E would prohibit casual collection of common invertebrate and plant paleontological resources and mineral resources in GSENM compared to Alternative D, where casual collection would be allowed in specially designated and posted areas. Alternative E would also include a wider National Historic Trail Management Corridor (0.5 mile on either side of the centerline) rather than the 330-foot-wide corridor for Alternative D.

When completed, the Record of Decision for the RMPs will provide comprehensive, long-range decisions for managing resources in the Planning Area and identify allowable uses on BLM-administered surface land and mineral estate.

Protest Period: A person who meets the conditions outlined in 43 Code of Federal Regulations (CFR) 1610.5-2 and wishes to file a protest must do so within 30 days of the date that the U.S. Environmental Protection Agency publishes its Notice of Availability in the *Federal Register*. Instructions for filing a protest with the Director of the BLM regarding the Proposed RMPs may be found online at https://www.blm.gov/filing-a-plan-protest and at 43 CFR 1610.5-2.

Comment Period for Proposed Target Shooting Closure: A comment regarding the proposed closure that would prohibit target shooting within certain BLM-administered surface land within GSENM and KEPA must be received within 60 days of the date the Notice of Availability for the GSENM and KEPA Proposed RMPs/Final EIS is published in the *Federal Register*. Please refer to the Dear Reader Letter for additional information regarding this comment period.

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Acronyms-Abbreviations

Term	Definition
° C	Degrees Celsius
° F	Degrees Fahrenheit
ACEC	Area of Critical Environmental Concern
AIM	Assessment, Inventory, and Monitoring
AirTAG	Air Resources Technical Advisory Group
AMS	Analysis of the Management Situation
ASFO	Arizona Strip Field Office
AUM	Animal unit month
bhp-hr	Brake horsepower-hour
BLM	Bureau of Land Management
BMP	Best management practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO_2	Carbon dioxide
CSU	Controlled surface use
dBA	A-weighted decibel
DWFC	Desired Wildland Fire Condition
EC	Escalante Canyons Monument Unit
EIS	Environmental Impact Statement
EJ	Environmental justice
EPA	U.S. Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
FMP	Fire Management Plan
FR	Federal Register
FRCC	Fire Regime Condition Class
GHG	Greenhouse gas
GIS	Geographic information system
GS	Grand Staircase Monument Unit
GSENM	Grand Staircase-Escalante National Monument
HA	Herd area
HAP	Hazardous air pollutant
HITRR	Hole-in-the-Rock Road
HMA	Herd Management Area
HUC-8	Hydrologic unit code-8
IM	Instruction Memorandum
ISA	Instant Study Area

Term	Definition
KE	Kanab-Escalante Planning Area
KEPA	Kanab-Escalante Planning Area
KFO	Kanab Field Office
KP	Kaiparowits Monument Unit
MFP	Management Framework Plan
MMP	Monument Management Plan
MSO	Mexican spotted owl
MZ	Management zone
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NOI	Notice of intent
NO_X	Nitrogen oxides
NPS	National Park Service
NRA	National Recreation Area
NRHP	National Register of Historic Places
NSO	No surface occupancy
NTMC	National Trail Management Corridor
OBJ	Objective
OHV	Off-highway vehicle
ORV	Outstandingly remarkable value
OSNHT	Old Spanish National Historic Trail
PAC	Protected activity center
PEIS	Programmatic Environmental Impact Statement
PFC	proper functioning condition
PFYC	Potential Fossil Yield Classification
$PM_{2.5}$	Particulate matter 2.5 microns or less in diameter
PM_{10}	Particulate matter 10 microns or less is diameter
R&I	Relevance and importance
R.S.	Revised Statute
RAC	Resource Advisory Council
RFD	Reasonably foreseeable development
RMP	Resource Management Plan
RMZ	Recreation Management Zone
ROD	Record of Decision
ROW	Right-of-way
SGMA	Sage-grouse Management Area
SITLA	School and Institutional Trust Lands Administration
SRMA	Special Recreation Management Area

Term	Definition
SRP	Special Recreation Permit
TDS	Total dissolved solids
TLS	Timing limitation stipulation
TMA	Travel management area
TMP	Travel Management Plan
U.S.C.	United States Code
UDWR	Utah Division of Wildlife Resources
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compound
VRI	Visual resource inventory
VRM	Visual Resource Management
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WUI	Wildland-Urban Interface

1 Purpose and Need

1.1 Introduction

This Final Environmental Impact Statement (EIS) analyzes the environmental effects for four distinct Resource Management Plans (RMPs): an RMP for each of the Grand Staircase-Escalante National Monument (GSENM) units—Grand Staircase, Kaiparowits, and Escalante Canyons—and an RMP for Federal lands previously included in the monument that were excluded from the boundaries by Presidential Proclamation 9682 (i.e., Kanab-Escalante Planning Area [KEPA] lands).

1.2 Planning Area Description

The Bureau of Land Management (BLM) Land Use Planning Handbook (H-1601-1) differentiates between geographic areas associated with planning. The *Planning Area* includes all lands within the boundaries of the GSENM units and KEPA, regardless of jurisdiction. The *Decision Area* includes the lands within the Planning Area for which the BLM has authority to make management decisions. The *analysis area* includes any lands, regardless of jurisdiction, that the BLM uses to analyze impacts on a particular resource. This area can extend beyond the Planning Area boundary. These areas will vary by resource and are important for a realistic analysis of potential impacts. The livestock grazing analysis includes allotments that the BLM administers in the Glen Canyon National Recreation Area (NRA) adjacent to the Planning Area. The BLM will not be making a decision on these areas, but the National Park Service may use the analysis in this EIS for subsequent decisions.

The Planning Area encompasses approximately 1.86 million acres[1] of Federal land, including lands originally designated under Presidential Proclamation 6920 on September 18, 1996, and lands added to the monument through subsequent legislated boundary adjustments and land exchanges. On December 4, 2017, President Trump issued Presidential Proclamation 9682 modifying GSENM and excluding from designation and reservation approximately 861,974 acres of BLM-administered surface land. Lands that remain part of GSENM (1,003,863 acres) are included in three units, known as the Grand Staircase (209,993 acres), Kaiparowits (551,034 acres), and Escalante Canyons (242,836 acres) units. KEPA is composed of Federal lands that Proclamation 9682 excluded from the national monument (861,974 acres) (Map 1). The three GSENM units and KEPA are described in the following sections.

1.2.1 Grand Staircase Unit

The Grand Staircase Unit lies within the western portion of GSENM and is close to Kanab, Utah. The unit is bordered on the south by State Highway 89, on the west by Johnson Canyon Road, on the north by Skutumpah Road, and on the east by the Paria River. The Grand Staircase Unit is named for one of the iconic landscapes in the American West: an unbroken sequence of cliffs and plateaus, considered to be the most colorful exposed geologic section in the world.

[1] The Planning Area for livestock grazing includes an additional acreage in the BLM Kanab Field Office, Arizona Strip Field Office, and National Park Service Glen Canyon NRA. These areas are included because the BLM administers livestock grazing allotments or permits within these areas. Refer to Section 3.12, *Livestock Grazing*, for more information.

The White Cliffs and Vermilion Cliffs within the Grand Staircase Unit contain world-class paleontological sites. This area also contains a number of relict vegetative communities occurring on isolated mesa tops. The archaeology of the Grand Staircase Unit is dominated by sites constructed by the Virgin Branch of the Ancestral Puebloans who occupied the area from nearly 2000 B.C.E. to about 1250 C.E. The landscape was also the home of some of the earliest corn-related agriculture in the Southwest, and it continues to hold remnants of these early farmsteads and small pueblos. The higher cliffs, benches, and plateaus hold evidence of occupation by Archaic and Late Prehistoric people, including Clovis and other projectile points and residential pit structures that indicate occupation by hunter-gatherers starting about 13,000 years ago. Following the abandonment of the area by Ancestral Puebloans, the area was re-occupied by the people known today as the Southern Paiute Indians. The Southern Paiute Indians and other tribes, such as the Hopi Tribe, also identify this area as part of their ancestral homelands.

1.2.2 Kaiparowits Unit

The Kaiparowits Unit lies within the center of GSENM and is the most remote and least visited of the GSENM units. The unit lies between the Escalante Desert to the east, the Big Water region to the south, the Paria River to the west, and Canaan Peak and Little Valley Wash to the north. The Kaiparowits Unit is dominated by a dissected mesa that rises thousands of feet above the surrounding terrain. These vast, rugged badlands are characterized by towering cliffs and escarpments that expose tiers of fossil-rich formations. This unit is also world renowned for rich fossil resources, including 16 species that have been found nowhere else. The plateau is considered one of the best, most continuous records of Late Cretaceous life in the world.

The rugged canyons and natural arches of the Upper Paria River expose the Carmel and Entrada formations that draw visitors to the unit. The western side of the Kaiparowits Unit includes the majority of the East Kaibab Monocline, which features an erosional ‘‘hogback’’ known as the ‘‘Cockscomb,’’ as well as broad exposures of multicolored rocks and intricate canyons. It is considered one of the true scenic and geologic wonders of the area. On the east side of the plateau, the Burning Hills is a geologic curiosity: a vast underground coal seam that some researchers believe has been burning for eons, sending acrid smoke up through vents in the ground and turning the hillsides brick red. Finally, along the eastern edge of the Kaiparowits Plateau is a series of oddly shaped arches and other rock formations known as the Devil’s Garden.

The Kaiparowits area also contains a unique record of human history. The overall archaeology of the Kaiparowits Plateau is dominated by Archaic and Late Prehistoric era sites. Prehistoric cliff structures in parts of the Kaiparowits Plateau are well preserved and provide researchers and visitors an opportunity to better understand the apparently peaceful mixture of three cultures starting in the early 1100s. In particular, the Fiftymile Mountain area contains hundreds of cultural resource sites, including Ancestral Puebloan habitations, granaries, and masonry structures. Historical use of the Kaiparowits area plays a very important part in the rich ranching history of southern Utah, which is evidenced by a complex pattern of roads, stock trails, line shacks, attempted farmsteads, and small mining operations. While the Hole-in-the-Rock Trail was under construction in 1879, Mormon pioneers camped in this area and held meetings and dances here. The old Paria Townsite is an important ghost town within the Kaiparowits area, as it served as the only town and post office site within the area at the turn of the 20th century.

1.2.3 Escalante Canyons Unit

The Escalante Canyons Unit lies on the northeast corner of GSENM and is the most visited of the three GSENM units. The unit lies between the Circle Cliffs and Glen Canyon NRA to the east, Hole-in-the-Rock Road to the south and west, and Dixie National Forest to the north.

The Canyonlands of the Escalante Canyons Unit display geologic activities and erosional forces that, over millions of years, created a network of deep, narrow canyons, high plateaus, sheer cliffs, and beautiful sandstone arches and natural bridges, including the 130-foot-tall Escalante Natural Bridge. Additionally, this unit contains Calf Creek Canyon, a canyon of red alcoved walls with expanses of white slickrock that is named for its use as a natural cattle pen at the end of the 19th century. To the east of the Canyonlands, Circle Cliffs is a breached anticline with spectacular painted-desert scenery, the result of exposed sedimentary rocks of the Triassic Chinle and Moenkopi formations. The Circle Cliffs area also contains large, unbroken petrified logs up to 30 feet in length.

The Escalante Canyons Unit also contains a high density of Fremont prehistoric sites, including pithouses, villages, storage cysts, and rock art. The canyon of the Escalante River and its tributary canyons contain one of the highest densities of rock art sites in southwestern Utah outside of Capitol Reef National Park, with sites dating from the Archaic to the Historic periods. The Hundred Hands rock art panel is located in the river canyon, and is spiritually important to all tribes that claim ancestry in the area. There are also significant historical sites in this unit related to grazing and ranching, along with the Boulder Mail Trail, which was used to ferry mail between the small desert outpost towns of Escalante and Boulder beginning in 1902.

1.2.4 Kanab-Escalante Planning Area

The remaining 861,974 acres of land that were excluded from GSENM by Presidential Proclamation 9682 are now managed by the Kanab Field Office and are referred to as KEPA. KEPA lands are scattered across the Planning Area between and adjacent to the GSENM units described above. In general, the features, resources, and history of KEPA are similar to those described above for each of the GSENM units. Portions of KEPA are adjacent to various National Park Service and Forest Service lands including Capital Reef National Park, Dixie National Forest, Bryce Canyon National Park, and Glen Canyon NRA. KEPA includes the Hole-in-the-Rock-Road, which is one of the most highly traveled routes in the Planning Area and provides access to the Glen Canyon NRA.

1.3 Purpose of and Need for the Plan

The purpose of a land use plan is to ensure BLM-administered surface lands are managed in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), which requires that the BLM "develop, maintain, and when appropriate, revise land-use plans" (43 United States Code [U.S.C.] 1712(a)). The purpose of these Proposed RMPs is to provide the allocation of resources and a comprehensive framework for the BLM's management of the public lands within the separate Planning Areas pursuant to the multiple-use and sustained yield mandates of FLPMA, the requirements of the Antiquities Act, and the specific direction in Presidential Proclamation 6920, as modified by Presidential Proclamation 9682. For the lands that remain within GSENM, the new RMPs will implement the President's direction in Presidential Proclamation 9682 and provide for the proper care and management of the "object[s] of antiquity" and "objects of historic or scientific interest" (16 U.S.C. 431–433) that

were identified in Presidential Proclamation 6920, as modified by Presidential Proclamation 9682. These objects are also identified in Appendix E (*Grand Staircase-Escalante National Monument Objects and Resource Values*) of this Final EIS. For lands excluded from GSENM by Presidential Proclamation 9682 (i.e., KEPA lands), the new RMP will implement the President's vision that the lands are managed for multiple use, consistent with other applicable legal requirements.

Presidential Proclamation 9682 required the preparation of an RMP for each of the three units within GSENM. Once the BLM approves the RMPs, it will revise the existing GSENM plan and replace the management from the existing plan for the BLM-administered lands within the GSENM. The proclamation also modified the boundaries of GSENM and both modified and clarified the management direction for the monument. In light of the boundary modifications and other changed conditions since the preparation of the existing Approved Monument Management Plan (MMP) and Record of Decision (BLM 2000), a new plan is also needed to determine appropriate management actions for lands that are no longer part of GSENM (i.e., KEPA lands).

1.4 Planning Criteria

Planning criteria are the constraints or ground rules that guide and direct the development of the RMP, and they determine how the planning team approaches development of alternatives and ultimately selects the Preferred Alternative. Preliminary planning criteria used in this RMP were listed in the January 2018 *Federal Register* notice of intent (NOI) to initiate the GSENM and KEPA RMPs/EIS, and additional planning criteria have been developed in response to the public scoping process and information following the NOI. The planning criteria for the GSENM and KEPA RMPs/EIS include the following:

- The planning process for the RMPs will be guided by Presidential Proclamation 6920 as modified by Presidential Proclamation 9682 in addition to FLPMA and the National Environmental Policy Act (NEPA).
- In accordance with Section 302 of FLPMA, BLM-administered surface lands in the Planning Area will 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." Therefore, if management of the Federal lands pursuant to the BLM's multiple-use and sustained yield mission conflicts with the direction in Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, the language provided within the proclamations overrides the management direction in the RMP.
- Federal lands excluded from GSENM will remain in Federal ownership and will be managed by the BLM under applicable laws.
- The BLM will ensure protection, conservation, and proper care and management of all identified GSENM objects as indicated in Appendix E (*Grand Staircase-Escalante National Monument Objects and Resource Values*) and Appendix I (*Monitoring Strategy*).
- The BLM will use current scientific information and results of inventory, monitoring, and coordination to determine appropriate management. The BLM will strive to incorporate the most current and readily available information to describe resources and to analyze potential impacts.

- The BLM will strive for consistency of management decisions with other adjoining planning jurisdictions, both Federal and non-Federal.
- The BLM will reference rather than repeat or duplicate direction from law, regulation, policy or agency guidance (e.g., instruction memoranda, manuals, handbooks) in the RMPs/EIS.
- Decisions made in the planning process will only apply to Federal lands and, where appropriate, to split-estate lands where the subsurface mineral estate is managed by the BLM.
- The BLM will honor valid existing rights (e.g., mineral rights, rights-of-way).
- Existing Wilderness Study Areas will continue to be managed to prevent impairment and ensure continued suitability for designation as wilderness. Should Congress release all or part of a Wilderness Study Area from wilderness study, resource management will be determined by preparing an amendment to the RMPs.
- A baseline reasonably foreseeable development scenario will be developed for oil, gas, and other mineral resources for KEPA lands. The reasonably foreseeable development scenario will be used to inform an appropriate range of management alternatives.
- Previously conducted wild and scenic river suitability determinations will be applied to this planning effort.
- The BLM will consider changes to off-highway vehicle area designations.
- The BLM will consider new special management areas including but not limited to Areas of Critical Environmental Concern (ACECs) in KEPA lands that are now excluded from the modified monument boundaries of GSENM.
- The BLM may allow motorized and non-mechanized vehicle use on roads and trails existing immediately before the issuance of Presidential Proclamation 6920 and maintain roads and trails for such use.
- Presidential Proclamation 9682 modified the management direction for the monument to provide that the designation did not affect authorizations for livestock grazing, or administration thereof, on Federal lands within the monument. Livestock grazing within the monument continues to be governed by laws and regulations other than Presidential Proclamation 9682.
- The BLM may authorize ecological restoration and active vegetation management activities in the monument.

1.5 Relationship to Regulations, Laws, Policies, Plans, and Guidance

Land use plan decisions are made according to the procedures in FLPMA, BLM planning regulations (43 Code of Federal Regulations 1600), the BLM Land Use Planning Handbook (H-1601-1), and other resource-specific guidance. The development of the RMPs, which requires preparation of an EIS, constitutes a major Federal action and is subject to NEPA, as amended. Additional Federal, State, and local regulations, laws, policies, plans, and guidance apply to the development of RMPs and EISs. Refer to Appendix F (*Laws, Regulations, Policies, and Guidance*) for more information.

The RMPs approved by the BLM would revise the 2000 MMP for GSENM, as amended, for management of the Grand Staircase, Kaiparowits, and Escalante Canyons Units as well as the BLM-administered land in KEPA. Management actions associated with land use plan amendments to the 2000 MMP for greater sage-grouse (BLM 2015, 2019a), fire and fuels

management (BLM 2005d), energy corridors (BLM 2009), and solar management (BLM 2012d) would be carried forward in the revised RMPs except where specifically noted in Chapter 2 of this document.

1.6 Issues Identified during Scoping

The formal scoping period began on January 16, 2018, with the publication of the NOI in the *Federal Register*. The scoping period ran through March 19, 2018, and the BLM held two public scoping meetings during this time. The BLM received 120,061 comment submissions from the public during and after the official public scoping period. Of the 120,061 submissions, 2,256 were individual comments, 117,713 were form letters, and 92 were duplicate submissions. Refer to the scoping report for more information about the results of the scoping process (BLM 2018a). The BLM also hosted a socioeconomic workshop on May 31, 2018, and accepted socioeconomic comments through June 8, 2018. During the workshop, five attendees provided oral comments and an additional 11 people submitted written comments during the comment period.

1.6.1 Planning Issues Addressed and Issues not Considered Further

During the scoping period, the BLM solicited comments from the public, organizations, tribal governments, and Federal, State, and local agencies to identify potential issues to be considered during the planning process. BLM resource specialists and cooperating agency input also identified management issues and concerns. During scoping, the BLM identified the following 38 issues to be considered during the planning process, which reflect a broad range of concerns and questions across various resource categories. Resource categories with the most identified issues include cultural, paleontological, livestock grazing, recreation, off-highway vehicle/transportation routes and access, and biological resources. Refer to the Scoping Report (BLM 2018a), pages 6 through 19, for additional information on issues identified during scoping.

Air and Climate

- What would be the potential impacts on air quality and climate change from management activities in the Planning Area?

Soils and Water

- How will the BLM protect, maintain, and restore soils, riparian areas, and watersheds with respect to potential impacts from increased recreation use, livestock grazing, mineral development, and other resource uses?

Biological Resources

- What impacts would resource uses (e.g., livestock grazing, recreation activities, off-highway vehicle [OHV] use, mineral development) have on vegetation in the Planning Area?
- How will the BLM determine the appropriate levels and methods of vegetation management?
- Will the BLM establish objectives to manage that habitat for special status species, such as Kodachrome bladderpod, Jones cycladenia, and Ute ladies'-tresses?
- How will the BLM address access to woodland products for subsistence and traditional uses, as well as for commercial harvesting and forest management?

- What would be the impact of other resource uses (e.g., livestock grazing, recreation activities, OHV use, mineral development) and drought on wildlife species and their habitat?
- Will the BLM establish objectives to manage habitat for special status species such as Mexican spotted owl, southwestern willow flycatcher, California condor, and Kanab ambersnail?

Cultural Resources and Native American Concerns

- How will the BLM address the conflicts between other land uses (such as recreation activities, OHV use, mineral development, and livestock grazing) and protection and preservation of cultural resources?
- How will the BLM address increasing demand of recreational use centered on cultural heritage?
- Will the BLM provide Native Americans access to public lands for their traditional uses and practices?

Paleontology

- Will the BLM identify measures to reduce potential impacts on paleontological resources from resource uses such as mineral development, OHV use, and recreational use?
- Will the BLM identify appropriate opportunities for study and preservation of important paleontological resources?

Aesthetic Resources (Visual Resources and Soundscapes)

- How will the BLM protect the Planning Area's visual resources?
- How will the BLM protect the Planning Area's dark sky values?
- How will the BLM protect the Planning Area's soundscape values?

Wildland Fire Management

- How will the BLM address wildland fire and fuels management and its potential impacts on other resources in the Planning Area?

Lands with Wilderness Characteristics

- Will the BLM identify lands with wilderness characteristics and develop appropriate management allocations to manage for those characteristics as a priority?

Livestock Grazing

- How will the BLM determine which areas should be available or unavailable for livestock grazing, and what should be the proper animal unit month (AUM) levels for allotments?
- How will the BLM determine proper rangeland health management levels and practices?
- How can the BLM address permittees' ability to improve and maintain fences, water facilities, etc.?
- How can the BLM reduce conflicts between grazing and other resource uses?

Recreation and Visitors Services

- Can recreational use in both high-use and low-use areas be managed to provide recreation opportunities while minimizing conflicts with other resource values and uses (e.g.,

protection of sensitive resources, livestock grazing, vegetation management, and minerals management)?

- Will the BLM determine the proper level of developed recreational facilities to address increased visitation while maintaining opportunities for primitive recreation and protecting sensitive resources?
- How can visitation and the permit system be managed to promote the optimum recreation experience and resolve issues caused by growing recreation use?
- How will the BLM resolve recreation-related human health and safety problems, such as disposal of human waste, protection of water quality, and road safety?
- How can the transportation system in the Planning Area be managed to provide an appropriate level of access for a variety of user groups, such as hikers, cyclists, OHV users, equestrians, and aircraft pilots?

Travel Management

- How should the transportation system in the Planning Area be managed to accommodate increased visitation while protecting sensitive Planning Area resources?

Lands and Realty

- Which lands in the Planning Area will be identified for retention, disposal, and acquisition, as well as potential rights-of-way and utility corridors?
- How will the BLM address potential impacts on private inholdings and adjacent private lands?

Energy Development (Minerals and Renewables)

- Which lands in the Planning Area will be made available for mineral development, and what would be the potential impacts of that development?

Special Designations

- How will the BLM manage the 16 existing Wilderness Study Areas in the Planning Area?
- Will the BLM revise existing designations in the Planning Area or propose new designations, including ACECs, Wild and Scenic Rivers, National Trails, and Research Natural Areas?

Social and Economic Conditions

- How will management of the Planning Area affect local economies?

Process

- How will State and local authorities, recreational groups, environmental groups, the GSENM Advisory Committee, or other management boards and stakeholders contribute to the planning process and ongoing management of the Planning Area?
- How will Native American tribes be included in the planning process?
- How will information about the planning process be disseminated to the public, and how will meaningful public input on the planning process be facilitated?
- Will the BLM coordinate with nearby management entities, such as the National Park Service and State and local governments, to ensure that Planning Area management is consistent with other existing management plans?

Some issues raised during scoping are not within the scope of the RMPs/EIS and would not meet the purpose and need. The primary scoping issues raised that were not within the scope of the RMPs/EIS and will not be addressed included general support, opposition, and legal concerns associated with GSENM and boundary adjustments; management recommendations for locations outside the Decision Area (e.g., State parks); and recommendations for changing legislation and policies. Refer to the Scoping Report (BLM 2018a), page 5, for additional information on issues that were raised during scoping that are not addressed in this planning process.

1.7 Collaboration

The BLM implemented a collaborative planning process for the development of the RMPs/EIS. The BLM invited a variety of Federal, State, and local agencies and American Indian Tribes to participate as cooperating agencies. The BLM signed Memoranda of Understanding with five cooperating agencies including the State of Utah Public Lands Policy Coordinating Office, Garfield County, Kane County, the National Park Service, the Pueblo of San Felipe, the Washington County Water Conservancy District, and the Kaibab Band of Paiute Indians. Cooperating agencies provided data, participated in alternatives development, conducted reviews of draft documents, and were involved in other aspects of the RMPs/EIS. The BLM also coordinated with the Utah State Resource Advisory Council to solicit input and recommendations on the RMPs. The BLM also collaborated with the Utah State Historic Preservation Office, the U.S. Fish and Wildlife Service, and potentially affected tribes. Refer to Chapter 4 (*Consultation and Coordination*) for additional information on BLM collaboration with cooperating agencies, tribes, the public, and other stakeholders.

1.8 Summary of Key Changes since the Draft RMPs/EIS

Gray-shaded text throughout these Proposed RMPs/Final EIS indicate changes that were made between the Draft and Final versions of the RMPs/EIS.[2] The BLM made changes to the Proposed RMPs/Final EIS based on public comments received on the Draft RMPs/EIS; additional input from cooperating agencies, tribes, and the BLM Interdisciplinary Team; input from the Utah State Resource Advisory Council; and revisions for clarity, consistency, and accuracy. The primary changes in the Proposed RMPs/Final EIS compared to the Draft RMPs/EIS are summarized below.

- Described and analyzed the impacts associated with a new alternative (Alternative E) that was developed in consideration of public comments on the Draft RMPs/EIS and input from cooperating agencies, tribes, the Utah State Resource Advisory Council, and the BLM Interdisciplinary Team; and by combining elements of the alternatives analyzed in the Draft RMPs/EIS. Alternative E is within the range of the alternatives considered in the Draft RMPs/EIS.
- Included additional detail on issues identified during scoping in Chapter 1 based on recommendations from the Utah State Resource Advisory Council.
- Made revisions to the alternatives tables in Chapter 2 and analyses in Chapter 3 to correct the identification of implementation-level decisions. The BLM incorrectly identified several management actions in the Draft RMPs/EIS as implementation-level actions.

[2] Changes to the Executive Summary since the Draft RMPs/EIS do not have gray shading because the Executive Summary is considered to be a stand-alone document.

"Management actions" are types of land use planning decisions (BLM Handbook H-1601-1). BLM Handbook H-8320-1 further identifies recreation land use plan actions to include land use plan–supporting management actions and allowable uses. The BLM has determined these management actions are necessary to prevent resource damage to provide for the proper care and management of the monument objects and values. These Proposed RMPs/Final EIS correct the error and clarify that there are fewer implementation-level decisions.

- Updated various acreages based on changes to the management alternatives and refinement of geospatial data.
- Made refinements to the boundaries of lands managed for the protection of wilderness characteristics in alternatives B and C based on updated lands with wilderness characteristics inventories that the BLM conducted after release of the Draft RMPs/EIS.
- Revised the Alternative A Visual Resource Management (VRM) class allocations in Chapter 2, *Alternatives*, to correct an error in the Draft RMPs/EIS and use the VRM classes assigned to Wilderness Study Areas from the 2000 GSENM MMP and Record of Decision. Updated Map 22 and calculations used in the analysis of Chapter 3 to reflect the revisions made to the VRM allocations.
- Revised Alternative D livestock grazing management in Chapter 2, *Alternatives,* to clarify that it is the portion of the Escalante River Allotment in the Glen Canyon NRA that would be unavailable to grazing. The portion of the Escalante River Allotment within the BLM Planning Area would be available to grazing. Also, removed the Phipps Allotment River Pastures from the list of areas unavailable to grazing under Alternative D. Updated the Livestock Grazing management maps (Maps 54 through 59) based on these changes.
- Revised Alternative A travel management designations and Chapter 2, *Alternatives*, and the Alternative A travel management designation map (Map 79) to better reflect the travel management designations included in the original GSENM MMP (BLM 2000). Updated calculations used in the Chapter 3 analysis to reflect the revisions to these allocations.
- Revised renewable energy management allocations in Chapter 2, *Alternatives*, to break out utility-scale solar energy development and wind energy development as separate management allocations by using criteria from the Solar and Wind Programmatic Records of Decision. Adjusted management allocation acreages for the action alternatives to reflect this change. Also clarified current management for solar energy development in Alternative A.
- Revised certain portions of the analysis sections in Chapter 3, *Affected Environment and Environmental Consequences*, based on public comments that indicated the need for clarifications in the analysis.
- Included additional text in the analysis of impacts on monument objects in Chapter 3 describing how the action alternatives would ensure the proper care and management of monument objects.
- Revised the analysis of impacts on ACECs in Section 3.16.2 to further identify management and best management practices that would afford protection to relevant and important values from irreparable damage under the alternatives where no ACECs are designated (i.e., alternatives D and E).
- Updated Appendix K, *Interdisciplinary Route Evaluation Forms and Analysis*, with additional analysis, clarification of the Inchworm Arch re-route, and inclusion of Alternative E.

- Included Appendix W, *Draft RMPs/EIS Comment Analysis Report*, which describes the Draft RMPs/EIS public comment period, comments received, and responses to comments received.
- Revised Appendix R, *Recreation Management Areas*, to reflect the Special Recreation Management Areas and Recreation Management Zones included under Alternative E (Proposed Plans).
- Revised Appendix S, *Areas of Critical Environmental Concern Evaluation Report*, to provide additional information on the BLM's process for evaluating nominated ACECs and evaluating their relevant and important criteria, including those ACECs nominated during the Draft RMPs/EIS public comment period.

Various other clarifications, corrections, additions, and minor revisions to the alternatives considered and the impacts analysis were made throughout the Proposed RMPs/Final EIS and the appendices to improve consistency within the documents and readability, to correct typographical errors, and to address comments from the public, cooperating agencies, and Native American tribes.

2 Alternatives

2.1 Introduction

This chapter describes the range of alternatives analyzed in the Grand Staircase-Escalante National Monument (GSENM) and Kanab-Escalante Planning Area (KEPA) Resource Management Plans (RMPs), and Environmental Impact Statement (EIS). The four alternatives include:

- **Alternative A** (Current Management/No Action): The continuation of existing management in the Planning Area. In general, current management is based on the GSENM Approved Monument Management Plan (MMP) and Record of Decision (ROD) (BLM 2000), to the extent that the plan is consistent with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682.
- **Alternative B**: Alternative B management generally focuses on protection of resources (e.g., wildlife, vegetation, cultural resources) while providing for targeted resource use (e.g., rights-of-way, travel, mineral development, livestock grazing).
- **Alternative C**: Alternative C management generally represents a balance of resource protection and resource use.
- **Alternative D (Preferred Alternative)**: Alternative D management generally focuses on maximizing multiple use (e.g., rights-of-way, mineral development, livestock grazing) and management flexibility while still providing for resource protection as required by applicable regulations, laws, policies, plans, and guidance, including the proper care and management of monument objects within GSENM.
- **Alternative E (Proposed Plans):** Alternative E represents the Bureau of Land Management's (BLM's) Proposed Plans. Alternative E was developed in response to comments received on the Draft RMPs/EIS and includes elements of alternatives B, C, and D. Similar to Alternative D, Alternative E would emphasize resource use and reduce constraints while ensuring the proper care and management of monument objects. Unlike Alternative D, Alternative E includes five Special Recreation Management Areas (SRMAs), two Extensive Recreation Management Areas (ERMAs), and nine Recreation Management Zones (RMZs). Alternative E also includes a small off-highway vehicle (OHV) closed area for No Man's Mesa Research Natural Area and allows more flexibility for group size limitations in certain areas for the protection of other resources. In addition, Alternative E would prohibit casual collection of common invertebrate and plant paleontological resources and mineral resources in GSENM.

The GSENM MMP (BLM 2000) delineated Management Zones and management specific to the Management Zones. Under the action alternatives, the existing Management Zones are not carried forward. Since the MMP, guidance has been released on special designations and management areas (e.g., BLM Handbook H-8320-1, Planning for Recreation and Visitor Services) that are incorporated into these RMPs instead of the Management Zones.

2.2 Alternatives Development Overview

The BLM considered input from the public and cooperating agencies to develop a range of reasonable alternatives for the RMPs and EIS. The BLM developed the range of alternatives described in this chapter using the following process:

- **Step 1.** Collect and consider input from the public through scoping.
- **Step 2.** Identify current management (Alternative A, No Action).
- **Step 3.** Develop alternatives in coordination with cooperating agencies that represent a wide range of reasonable management actions.
- **Step 4.** Analyze the potential effects of implementing the alternatives.
- **Step 5.** Identify the Preferred Alternative.
- **Step 6.** Develop the Proposed Plans.
- **Step 7.** Analyze the potential effects of implementing the Proposed Plans.

2.3 Detailed Alternatives

This section describes the range of alternatives that are carried forward for detailed analysis including the goals and objectives for each resource program, management actions common to all alternatives, and management actions that vary by alternative. In addition to the management actions included in the alternatives, the BLM would apply best management practices (BMPs), stipulations, and monitoring, as described in Appendix G (*Best Management Practices*), Appendix H (*Stipulations and Exceptions, Modification, and Waivers*), and Appendix I (*Monitoring Strategy*).

The range of alternatives is presented in tables and organized as described in Table 2-1. The goal(s) and objectives for each program/resource are provided at the top of each table followed by management common to all alternatives and then management by alternative.

Table 2-1 Alternatives Tables Organization

Record Number	Category	Specific Program/Resource Topic
1000	Resource	Air Resources; Cultural Resources; Fish and Wildlife and Special Status Species; Lands with Wilderness Characteristics; Paleontological Resources and Geology; Soil and Water Resources; Vegetation and Fire and Fuels Management; Visual Resources, Night Skies, and Natural Soundscapes; Wild Horses; and Forestry and Woodland Products
2000	Resource Use	Lands and Realty and Renewable Energy; Livestock Grazing; Minerals; Recreation; and Transportation and Access
3000	Special Designations	Areas of Critical Environmental Concern; National Historic Trails; Scenic Routes; Wild and Scenic Rivers; and Wilderness Study Areas
4000	Socioeconomic and Science	Social and Economic Considerations; and Science and Monument Advisory Committee

The tables include five additional columns to the left of the range of alternatives. The "OBJ" column identifies which goal and/or objective the management supports. The remaining four columns identify which RMP the management applies to using the following acronyms: EC – Escalante Canyons Monument Unit (GSENM), KP – Kaiparowits Monument Unit (GSENM), GS – Grand Staircase Monument Unit (GSENM), KE – Kanab-Escalante Planning Area (KEPA).

Management is generally only listed once in the tables to avoid repetition. In general, acreages reported in the alternatives are for the total Decision Area. Geospatial data boundaries may have overlaps and gaps where features should align and share a boundary. As a result, there

may be a margin of error associated with geographic information system–derived allocation and constraint acreages reported in the alternatives. Refer to Chapter 3, Table 3-1, for acreages separated by monument unit and KEPA.

This document includes both land use planning and implementation level decisions. Following completion of the Proposed RMPs, pursuant to BLM's planning regulations (43 Code of Federal Regulations [CFR] 1610.5-2), any person who participated in the planning process and has an interest that is or may be adversely affected by the planning decisions may protest approval of the planning decisions. Unlike land use planning decisions, implementation decisions are not subject to protest under BLM planning regulations, but are subject to an administrative review process, the requirements of which are identified in applicable regulations and policies. Following the approval of the RMPs, the BLM would develop implementation-level plans, including but not limited to a paleontological resource management plan, recreation area management plans, and travel and transportation management plans.

The BLM administers grazing allotments/permits in the National Park Service (NPS) Glen Canyon National Recreation Area (NRA) adjacent to the Planning Area (Map 1). The alternatives include management for the allotments and permits in Glen Canyon NRA to inform subsequent NPS decisionmaking. Implementation of management prescriptions identified in these plans, including management on NPS lands, will be made in coordination and cooperation with tribal, State, and local governments, and other stakeholders, as appropriate.

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2.3.1 Air Resources

Air Resources (AR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal AR:1 Minimize the impact of management actions on air quality in the Planning Area by complying with all applicable State and local air quality laws, rules, and regulations. **Objectives:** **AR:1.1** Maintain concentrations of criteria pollutants in compliance with applicable State and Federal ambient air quality standards within the scope of BLM authority. **AR:1.2** Reduce visibility-impairing pollutants in accordance with the reasonable progress goals and time frames established in the State of Utah's Regional Haze State Implementation Plan. **AR:1.3** Manage atmospheric deposition pollutants to below generally accepted levels of concern and levels of acceptable change. **AR:1.4** Manage public land activities consistent with at least the Federal Class II area standards and visibility (regional haze) criteria, and no less than any local governments' air quality criteria.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
1001	AR:1.1 AR:1.2 AR:1.3 AR:1.4	X	X	X	X	No similar action.	Mitigate actions that are projected to exceed ambient air quality standards or adversely affect visibility (regional haze) in the Class I air areas (Map 2).			
1002	AR:1.1 AR:1.2 AR:1.3 AR:1.4	X	X	X	X	No similar action.	Manage activities at least within air quality standards established by the Environmental Protection Agency and Utah Department of Air Quality and no less than any local governments' air quality standards.			
1003	AR:1.1 AR:1.2 AR:1.3 AR:1.4				X	No similar action.	Mitigate potential impacts of mineral development emissions on regional ozone formation by requiring the following BMPs for any development projects (exceptions may be considered during site-specific permitting): • Drill rig engines with Tier 2 or better emission rates, natural gas–fired drill rig engines, or electrification of drill rig engines. • Stationary internal combustion engine standard of 2 grams NO_X/bhp-hr for engines equal to or less than 300 horsepower and 1 gram NO_X/bhp-hr for engines more than 300 horsepower. • Low-bleed or no-bleed pneumatic pump valves. • Dehydrator volatile organic compound emission controls to +95 percent efficiency. • Tank volatile organic compound emission controls to +95 percent efficiency equivalent to New Source Performance Standards subpart 0000. • All new and replacement internal combustion gas field engines of less than or equal to 300 design rated horsepower shall not emit more than 2 grams of NO_X per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower. All new and replacement internal combustion gas field engines of greater than 300 design-rated horsepower must not emit more than 1 gram of NO_X per horsepower-hour. • A Fugitive Dust Control Plan would be required for mineral activities that would disturb a surface area larger than 0.25 acre or that would involve truck traffic on unpaved or untreated surfaces.			

2.3.2 Cultural and Heritage Resources

Cultural and Heritage Resources (CR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal CR:1 Provide for the proper care and maintenance of cultural resources [*as objects of GSENM]*. Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations on BLM-administered surface lands. **Objectives:** **CR:1.1** Provide opportunities for enhanced public education and interpretation of cultural resources. **CR:1.2** Support programs and partnerships that provide opportunities for stewardship, conservation, and educational use of cultural resources. **CR:1.3** Allow for and seek opportunities that provide for scientific research related to cultural resources. **CR:1.4** Recognize opportunities for the experimental use of appropriate cultural resources that may lead to better management and care of cultural resources. **Goal CR:2** Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses. **Objectives:** **CR:2.1** Seek to restore and stabilize important and at-risk cultural resources. **Goal CR:3** Recognize tribal and local county interests and work with tribes and counties to support uses of public lands, as appropriate. **Objectives:** **CR:3.1** Develop and maintain working relationships with tribes having an interest in the area. **CR:3.2** Consult with tribal governments regarding proposed land uses with the potential to affect resources identified as having tribal interests or concerns. **CR:3.3** Determine the types of resources of concern to tribes and local counties and consider tribal and county views when making land use allocations or decisions. **CR:3.4** Provide opportunities for traditional (Native American) uses of cultural resources, sacred sites, landscapes, and native plants.			
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
1004	CR:1.1 CR:1.2 CR:1.3 CR:2.1	X	X	X	X	Improve visitor understanding of archaeological resources and prevent damage through education and interpretation. Make archaeological site etiquette information readily available to visitors.				
1005	CR:1.1 CR:1.2 CR:1.3	X	X	X	X	Establish continuing collaborative programs with local communities, organizations, local and State agencies, Native American communities, outfitters and guides, volunteers, and other interested parties to identify, inventory, document, monitor, and develop and implement plans for the restoration, stabilization, protection, and/or interpretation of appropriate sites and resources. Continue the current Oral History Program in cooperation with local communities.				
1006	CR:1.1 CR:1.2 CR:1.3	X	X	X		Facilitate appropriate research to improve understanding of cultural resources by allowing for study, collection, or recordation of scientific information that is most at risk of being damaged or lost through disturbance or the passage of time, including oral histories and ethnologies related to the monument area. Continue to gather baseline data on the biological, physical, cultural, and social sciences within the monument. Conduct applied research regarding the management of natural systems, including disturbance and recovery strategies.				
1007	CR:1.1 CR:1.2 CR:1.3 CR:3.1 CR:3.2	X	X	X	X	Establish and maintain agreements with all Native American tribes interested in specific projects or areas on which they wish to consult.				
1008	CR:1.1 CR:1.2 CR:1.3		X		X	Support local stakeholders in the development of Hole-in-the-Rock Trail Traditional Cultural Property and/or other appropriate designation.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
1009	CR:1 CR:2.1	X	X	X	X	No similar action.	Develop Cultural Resources Management Plans (CRMPs) for each GSENM unit and KEPA. These plans will assign cultural sites to use categories (e.g., public use, scientific, traditional use), and management for the protection and interpretation of these sites. The criteria in Appendix J (*Cultural Resources*) will be used to assign cultural sites to appropriate classifications. Dance Hall Rock will be assigned to the public use category. The CRMPs for GSENM will provide for the proper care and management of cultural resource monument objects.			

Cultural and Heritage Resources (CR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVES										
1010	CR:1.1 CR:1.2 CR:3.1 CR:3.2 CR:3.3 CR:3.4	X	X	X	X	No similar action.	Allow Native American non-commercial traditional use of vegetation and forest and woodland products for the collection of herbs, medicines, traditional use items, or items necessary for traditional, religious or ceremonial purposes without a permit. Allow Native American non-commercial personal use collection of vegetation and forest and woodland products through free permits.	Allow Native American non-commercial traditional use of vegetation and forest and woodland products for the collection of herbs, medicines, traditional use items, or items necessary for traditional, religious, or ceremonial purposes, through free permits.	Allow Native American non-commercial traditional use of vegetation and forest and woodland products for the collection of herbs, medicines, traditional use items, or items necessary for traditional, religious, or ceremonial purposes without a permit.	Allow Native American non-commercial traditional use of vegetation and forest and woodland products for the collection of herbs, medicines, traditional use items, or items necessary for traditional, religious, or ceremonial purposes without a permit.

2.3.3 Fish and Wildlife and Special Status Species

2.3.3.1 Fish and Wildlife

Fish and Wildlife (FW)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal FW:1 Manage the biological integrity of terrestrial and aquatic ecosystems to maintain and/or improve habitat and fish and wildlife populations, with emphasis on ecosystem health and overall biodiversity. **Objectives:** **FW:1.1** Maintain and/or improve habitat quantity and quality (forage, water, cover, space, security, trophic level integrity, and biogeochemical processes) sufficient to sustain diverse wildlife populations, meeting objectives identified in coordination with the UDWR, USFWS, and other Federal, State, and local agencies in managing special status species and their habitat. **FW:1.2** Maintain and/or improve aquatic stream habitat to support productive and diverse fisheries and other aquatic populations. **FW:1.3** Maintain and/or improve habitat connectivity and unrestricted wildlife movement between ecological zones to the maximum extent possible. **FW:1.4** Maintain and/or improve and enhance aquatic and wildlife resources and provide for biological diversity to support healthy ecosystems. **FW:1.5** Conserve habitat for migratory birds and emphasize management of migratory birds listed on the USFWS's current list of Birds of Conservation Concern and the Partners-in-Flight priority species. **FW:1.6** Facilitate appropriate research to improve understanding of fish and wildlife species and habitat. **FW:1.7** Increase public education and appreciation of fish and wildlife species through interpretation.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
1011	FW:1.6	X	X	X	X	No similar action.	Protect and conserve migratory birds and raptors and their habitats in accordance with current policy and applicable BMPs (Appendix G [*Best Management Practices*]).			
1012	FW:1.1				X	No similar action.	Apply timing limitation stipulations for leasable minerals within crucial seasonal habitat (Map 3).			
1013	FW:1.1	X	X	X	X	No similar action.	Any proposal to use domestic sheep/goats as pack animals or for any other use would be considered per BLM Manual 1730 (or applicable guidance). A site-specific analysis of any proposal would be conducted to identify the level of risk to the health of wild sheep and determine whether the action can occur and still achieve effective separation between domestic sheep/goats and wild sheep.			
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
1014	FW:1.3 FW:1.4 FW:1.5	X	X	X	X	Manage habitats for the recovery or reestablishment of native populations.	Same as Alternative A.	Manage habitats for the recovery or reestablishment of native and naturalized fish and wildlife species. In coordination with the NPS, reduce occurrences of nonnative species affecting NPS lands by removing introduced or nonnative species in the Planning Area that are directly adjacent to or in close proximity to NPS lands (per NPS Management Policies 4.4.1).	Manage habitats for the recovery or reestablishment of native, naturalized, or introduced fish and wildlife species in accordance with UDWR species management plans with goals and objectives set forth by UDWR.	Manage habitats for the recovery or reestablishment of native, naturalized, or introduced fish and wildlife species in accordance with UDWR species management plans with goals and objectives set forth by UDWR.

Fish and Wildlife (FW)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1015	FW:1.1	X	X	X	X	No similar action.	Allow limited maintenance of existing and development of new habitat treatments.	Allow maintenance of existing habitat treatments that benefit native wildlife. Allow new habitat improvement treatments for native wildlife in accordance with current species-specific guidelines and local working group prescriptions.	Same as Alternative C, except allow maintenance of existing and development of new habitat treatments to benefit native, naturalized, or introduced fish and wildlife, as well as other resources and uses of BLM-administered land.	Allow maintenance of existing habitat treatments that benefit native, naturalized, or introduced fish and wildlife, as well as other resources and uses of BLM-administered land. Allow new habitat improvement treatments to benefit native, naturalized, or introduced fish and wildlife, as well as other resources and uses of BLM-administered land in accordance with current species-specific guidelines and local working group prescriptions.
1016	FW:1.1 FW:1.3 FW:1.4 FW:1.5	X	X	X	X	Preserve the integrity of wildlife corridors, migration routes, and access to key forage, nesting, and spawning areas by limiting adverse impacts from development in the monument.	Manage big-game crucial seasonal ranges; birthing, fawning, and lambing habitats; and migration corridors as follows: • Allow vegetation treatments to achieve or maintain habitat objectives and improve the quality and value of these areas for big game and other wildlife. • Allow modifying (via smooth wire), removing (if no longer necessary), or seasonally adapting (seasonal laydown) fencing if proven to impede movement of big game through migration corridors. • Prohibit surface-disturbing activities during sensitive seasons. • Co-locate or consolidate placement of permanent facilities in big game habitat so as to limit surface disturbance and habitat fragmentation. • Close big game crucial winter range to OHV use during sensitive seasons (Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*]). • Prohibit surface-disturbing activities in crucial desert bighorn sheep habitat.	Manage big-game crucial seasonal ranges; birthing, fawning and lambing habitats; and migration corridors as follows: • Prioritize habitat restoration in these areas to achieve or maintain habitat objectives and improve the quality and value of these areas for big game and other wildlife. • Manage for a mosaic of mid-, early-, and late-seral vegetation. • Allow modifying (via smooth wire), removing (if no longer necessary), or seasonally adapting (seasonal laydown) fencing if proven to impede movement of big game through migration corridors. • Allow permanent facilities and surface-disturbing activities during sensitive seasons after coordination with appropriate State agencies and utilizing BMPs (Appendix G [*Best Management Practices*]) unless (1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations, or (2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts. • Prohibit surface-disturbing activities in crucial desert bighorn sheep habitat during lambing season (Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*]).	Allow surface-disturbing activities, fence modification and maintenance, travel, and vegetation treatment in big-game crucial seasonal ranges, birthing habitats, and migration corridors on a basis consistent with other resource use restrictions. Allow surface-disturbing activities in crucial desert bighorn sheep habitat during lambing season subject to BMPs and mitigation (Appendix G [*Best Management Practices*] and Appendix I [*Monitoring Strategy*]).	Allow surface-disturbing activities, fence modification and maintenance, travel, and vegetation treatment in big-game crucial seasonal ranges, birthing habitats, and migration corridors on a basis consistent with other resource use restrictions and in accordance with the big game BMPs in Appendix G, *Best Management Practices*. Prohibit surface-disturbing activities in the Highway 89 mule deer migration corridor from October 1 to April 30, with exceptions considered (Map 3). Allow surface-disturbing activities in crucial desert bighorn sheep habitat subject to BMPs and mitigation as applicable (Appendix G [*Best Management Practices*] and Appendix I [*Monitoring Strategy*]).
1017	FW:1.2	X	X	X	X	No similar action.	Design road crossings of waterbodies that support fish to accommodate natural stream processes (e.g., sediment and debris transport).	Design road crossings of waterbodies that support fish to allow for fish passage.	Same as Alternative C.	Design road crossings of waterbodies that support fish to allow for fish passage; exceptions may be considered.
1018	FW:1.4	X	X	X	X	No similar action.	Allow introduction, transplant, augmentation, and reestablishment of native fish and wildlife species in cooperation and collaboration with UDWR, subject to current policy.	Allow introduction, transplant, augmentation, and reestablishment of native and naturalized fish and wildlife species in cooperation and collaboration with UDWR, subject to current policy. Allow removal of unwanted nonnative wildlife species.	Same as Alternative C.	Allow introduction, transplant, augmentation, and reestablishment of native and naturalized fish and wildlife species in cooperation and collaboration with UDWR, subject to current policy. Allow removal of unwanted nonnative wildlife species.
1019	FW:1.1 FW:1.3 FW:1.5				X	No similar action.	Retain all crucial wildlife habitat in public ownership.	Same as Alternative B.	Same as Alternative B.	Retain all crucial wildlife habitat in public ownership unless land tenure adjustments result in net increase of habitat or can be shown to benefit the species in coordination with UDWR, USFWS, and/or the appropriate wildlife management agency.

2.3.3.2 Special Status Species (Threatened, Endangered, and Sensitive)

						Special Status Species– Threatened, Endangered, and Sensitive (SS)				
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal SS:1 Maintain, protect, enhance, and recover habitats and populations of federally listed threatened, endangered, or candidate plant, animal, or fish species, and actively promote recovery to the point that provisions of the ESA are no longer required. Maintain, protect, and enhance habitats of the latest Utah BLM State Director's sensitive plant and animal species list to ensure that BLM-authorized or approved actions are consistent with the conservation needs of the species and do not contribute to the need to list any species under the ESA. **Objectives:** **SS:1.1** Coordinate with the USFWS and other Federal, State, and local agencies in managing special status species and their habitat. **SS:1.2** Allow, initiate, and/or participate in scientific research of listed and sensitive species and their habitats. **SS:1.3** Develop and implement conservation measures to minimize long-term habitat fragmentation and maintain habitat connectivity through avoidance and site-specific reclamation in order to provide the habitat quality and quantity to meet ecological requirements and support a natural diversity of species. **SS:1.4** Consult and coordinate with USFWS on an ongoing basis throughout implementation of this plan for activities potentially affecting threatened and endangered species and their habitats.				
						MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES				
1020	SS:1.1 SS:1.4	X	X	X	X	Manage greater sage-grouse populations and habitat in accordance with the Utah Greater Sage-Grouse Approved RMP Amendment (BLM 2019a), or more current guidance as it is adopted.				
1021	SS:1.3 SS:1.4	X	X	X	X	BMPs (Appendix G [*Best Management Practices*]) would be applied for special status species during activity and implementation level decisions. Committed conservation and protection measures identified in the Biological Opinion would be applied for the protection of listed species during activity and implementation level decisions.				
1022	SS:1.3	X	X	X	X	If recreation activities (e.g., hiking, camping, backpacking, rappelling, rock climbing, canyoneering) are determined to disrupt or result in abandonment of known roost or nest sites for special status bird species, reduce impacts through visitor allocations, group size restrictions, or other measures. Apply visitor allocations and group size restrictions in accordance with Recreation decisions.				
						MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE				
						Special Status Species Conservation and Habitat Enhancement				
1023	SS:1.3	X	X	X	X	No similar action.	Prohibit surface-disturbing activities within habitat for special status species (Map 4) using appropriate buffers and seasons (as specified in Appendix G [*Best Management Practices*], Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*], or current guidance).	Allow surface-disturbing activities within habitat for special status species using appropriate buffers and seasons (as specified in Appendix G [*Best Management Practices*], Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*], or current guidance) only if (1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations as outlined in recovery and conservation plans and when such actions would not lead to the need to list the species, or (2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts to acceptable limits.	Allow surface-disturbing activities within habitat for special status species using appropriate buffers and seasons (as specified in Appendix G [*Best Management Practices*], Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*], or current guidance).	Allow surface-disturbing activities within habitat for special status species using appropriate buffers and seasons (as specified in Appendix G [*Best Management Practices*], Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*], or current guidance).
1024	SS:1.3	X	X	X	X	Prohibit permitting of communication sites, utility ROWs, and road ROWs in known special status species populations. As permits are granted for these sites and ROWs, surveys will be completed to determine the presence of special status species in the area. If they are found, these activities will be moved to another location.	Prohibit new ROWs and communication sites in special status species habitat and applicable buffers (as specified in Appendix G [*Best Management Practices*] or current guidance) when pre-development surveys confirm species' presence or when BLM staff determine that development could inhibit species' recovery.	Same as Alternative B.	Avoid new ROWs and communication sites in special status species habitat and applicable buffers (as specified in Appendix G [*Best Management Practices*] or current guidance) where suitable alternatives exist.	Avoid new ROWs and communication sites in special status species habitat and applicable buffers (as specified in Appendix G [*Best Management Practices*] or current guidance) where suitable alternatives exist.
1025	SS:1.3				X	No similar action.	Close special status species wildlife habitat and buffers to mineral material disposals.	No similar action.	No similar action.	No similar action.

						Special Status Species– Threatened, Endangered, and Sensitive (SS)				
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Special Status Birds and Raptors				
1026	SS:1.3	X	X	X	X	Establish criteria for designation of rock climbing areas. These criteria will not allow climbing areas to be designated in known peregrine falcon or Mexican spotted owl nest sites. If new sites are identified as occupied for nesting in areas designated for climbing, seasonal closures will be established in those areas to ensure that disturbance of nesting activities does not occur.	Establish seasonal closures for rock climbing in suitable nesting areas for California condor, golden eagle, Mexican spotted owl, and peregrine falcon regardless of current occupancy.	Establish seasonal closures for rock climbing in occupied nesting areas for California condor, golden eagle, Mexican spotted owl, and peregrine falcon during periods of occupancy.	Same as Alternative C.	Establish seasonal closures for rock climbing in occupied nesting areas for California condor, golden eagle, Mexican spotted owl, and peregrine falcon during periods of occupancy.
						California Condor				
1027	SS:1.3	X	X	X	X	No similar action.	Prohibit surface use or disruptive activities within 0.5 mile of occupied roosts or 1 mile of occupied California condor nests.	Allow surface use or disruptive activities within 0.5 mile of occupied California condor roosts or 1 mile of occupied nests only if (1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations, or (2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts.	Same as Alternative C.	Allow surface use or disruptive activities within 0.5 mile of occupied California condor roosts or 1 mile of occupied nests only if (1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations, or (2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts.
						Mexican Spotted Owl				
1028	SS:1.3	X	X	X	X	No similar action.	Prohibit new recreation facilities or trails within Mexican spotted owl PACs.	Prohibit development of recreation facilities or trails within PACs that could conflict with Mexican spotted owl management objectives.	Allow development and maintenance of recreation and administrative facilities in Mexican spotted owl PACs outside of the breeding season if (1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations, or (2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts.	Allow development and maintenance of recreation and administrative facilities in Mexican spotted owl PACs outside of the breeding season if (1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations, or (2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts.
						Western Yellow-Billed Cuckoo and Southwestern Willow Flycatcher				
1029	SS:1.3 SS:1.4	X	X	X	X	No similar action.	Prohibit surface-disturbing activities within 0.25 mile of suitable habitat between June 1 and August 31 for western yellow-billed cuckoo and between April 15 and August 15 for southwestern willow flycatcher.	Prohibit surface-disturbing activities within 0.25 mile of occupied breeding habitat between June 1 and August 31 for western yellow-billed cuckoo and between April 15 and August 15 for southwestern willow flycatcher.	Allow surface-disturbing activities within occupied breeding habitat between June 1 and August 31 for western yellow-billed cuckoo and between April 15 and August 15 for southwestern willow flycatcher if after site-specific analysis and consultation with USFWS it is determined that the activity would not adversely affect either the birds or their habitat.	Allow surface-disturbing activities within occupied breeding habitat between June 1 and August 31 for western yellow-billed cuckoo and between April 15 and August 15 for southwestern willow flycatcher if after site-specific analysis and consultation with USFWS it is determined that the activity would not adversely affect either the birds or their habitat.
						Current and Future Special Status Plants (Federal, State and BLM listed plants)				
1030	SS:1.3	X	X	X	X	Prohibit designation of future fuelwood cutting areas in listed plant populations.	Prohibit fuelwood cutting in all special status plant species habitat.	Prohibit fuelwood cutting in habitat for federally listed special status plant species. Allow fuelwood cutting in habitat for BLM sensitive plant species if the BLM determines during site-specific assessment that no habitat degradation would occur.	Prohibit fuelwood cutting in habitat for federally listed special status plant species. Allow fuelwood cutting in habitat for BLM sensitive plant species with appropriate conservation measures to mitigate impacts as determined during site-specific assessments of proposed projects.	Prohibit fuelwood cutting in habitat for federally listed special status plant species. Allow fuelwood cutting in habitat for BLM sensitive plant species with appropriate conservation measures to mitigate impacts as determined during site-specific assessments of proposed projects.
1031	SS:1.3	X	X	X	X	Relocate existing trails in areas where federally listed plant species grow away from the plants and potential habitat when possible. These protection measures apply to current as well as future potential habitat areas for federally listed plant species.	Avoid locating new trails and any other facilities inside federally listed plant species habitat unless consultation with USFWS determines it is acceptable.	Same as Alternative B.	Same as Alternative B.	Avoid locating new trails and any other facilities inside federally listed plant species habitat unless consultation with USFWS determines it is acceptable.

						Special Status Species– Threatened, Endangered, and Sensitive (SS)				
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1032	SS:1.1 SS:1.2 SS:1.3 SS:1.4	X	X	X	X	Generally, disallow surface-disturbing activities in threatened or endangered plant species habitat. Projects that provide new information and understanding of listed species, their populations, and/or their habitat may be allowed after approval by the BLM and the review and issuance of permits by USFWS. All projects will be evaluated on a case-by-case basis.	Prohibit surface-disturbing activities in federally listed plant species habitat unless (1) the activity enhances scientific understanding of the species and (2) appropriate approvals and permits are obtained from the BLM and USFWS.	Same as Alternative B.	Same as Alternative B.	Prohibit surface-disturbing activities in federally listed plant species habitat unless (1) the activity enhances scientific understanding of the species and/or (2) appropriate approvals and permits are obtained from the BLM and USFWS.
1033	SS:1.3	X	X	X	X	Target areas with threatened or endangered plants for noxious weed control activities as a first priority.	Target noxious weed control in areas with federally listed plant species habitat as a first priority.	Same as Alternative B.	Apply treatments to control outbreaks or establishment of noxious weed species in all areas (including special status species plants) in coordination with local cooperative weed management partnership.	Apply treatments to control outbreaks or establishment of noxious weed species in all areas (including special status species plants) in coordination with local cooperative weed management partnership.
1034	SS:1.3 SS:1.4	X	X	X	X	Prohibit reseeding or surface-disturbing restoration activities after fires in areas with special status plant species. Natural diversity and vegetation structure will provide adequate regeneration.	Prohibit reseeding or surface-disturbing restoration activities after fires in known special status plant species habitat unless consultation with USFWS indicates these measures are necessary for the protection and/or recovery of listed species.	Allow reseeding or surface-disturbing restoration activities after fires in known special status plant species habitat if determined acceptable through consultation with USFWS.	Same as Alternative C.	Allow reseeding or surface-disturbing restoration activities after fires in known special status plant species habitat if determined acceptable through consultation with USFWS.
1035	SS:1.3 SS:1.4	X	X	X	X	Prohibit management-ignited fires in areas with special status plant species unless consultation with USFWS indicates that fire is necessary for the protection and/or recovery of listed species.	Prohibit prescribed fires in known special status plant species habitat unless consultation with USFWS indicates that fire is necessary for the protection and/or recovery of listed species.	Same as Alternative B.	Allow prescribed fires in known special status plant species habitat if determined acceptable through consultation with USFWS.	Allow prescribed fires in known special status plant species habitat if determined acceptable through consultation with USFWS.
1036	SS:1.3	X	X	X	X	Prohibit trails, parking areas, or other recreation facilities in any federally listed plant species population.	Prohibit expansion or development of new trails, parking areas, or other recreation facilities in habitat for federally listed plant species.	Avoid expansion or development of new trails, parking areas, or other recreation facilities in habitat for federally listed plant species.	Allow expansion or development of new trails, parking areas, or other recreation facilities in habitat for federally listed plant species if determined acceptable through consultation with USFWS.	Allow expansion or development of new trails, parking areas, or other recreation facilities in habitat for federally listed plant species if determined acceptable through consultation with USFWS.
1037	SS:1.1 SS:1.3 SS:1.4	X	X	X	X	No similar action.	Prohibit surfacing-disturbing or habitat-fragmenting activities within 0.25 mile of potential, suitable, and occupied special status plant habitat.	Avoid surface-disturbing activities within 330 feet or habitat-fragmenting activities within 660 feet of potential, suitable, and occupied special status plant habitat. Allow surface-disturbing activities within 330 feet or habitat-fragmenting activities within 660 feet of potential, suitable, and occupied special status plant habitat only if (1) the activity is consistent and compatible with protection, maintenance, or enhancement of the habitat and populations as outlined in recovery and conservation plans and when such actions would not lead to the need to list the plant, or (2) the activity is relocated or redesigned to eliminate or reduce detrimental impacts to acceptable limits.	Allow surface-disturbing activities in occupied special status plant habitat with appropriate mitigation or in occupied listed species habitat after consultation with USFWS during site-specific permitting.	Allow surface-disturbing activities in occupied special status plant habitat with appropriate mitigation or in occupied listed species habitat after consultation with USFWS during site-specific permitting.
1038	SS:1.3				X	No similar action.	Manage mineral leasing as open subject to No Surface Occupancy in federally listed plant species occupied and suitable habitat.	Manage mineral leasing as open subject to Controlled Surface Use in federally listed plant species occupied and suitable habitat. In these areas, well placement would be located to not adversely affect the species or their habitats.	Same as Alternative C.	Manage mineral leasing as open subject to Controlled Surface Use in federally listed plant species occupied and suitable habitat. In these areas, well placement would be located to not adversely affect the species or their habitats.

						Special Status Species– Threatened, Endangered, and Sensitive (SS)				
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Special Status Fish Species				
1039	SS:1.3 SS:1.4	X	X	X	X	No similar action.	Prohibit surface-disturbing activities within 0.5 mile of special status fish species habitat.	Avoid surface-disturbing activities within 330 feet of special status fish species habitat. Allow surface-disturbing activities within 330 feet of special status fish species habitat only if (1) impacts from the proposed action can be adequately mitigated, or (2) the action will benefit the species and/or habitat.	Allow surface-disturbing activities within special status fish species habitat only after a site-specific analysis and consultation with USFWS as appropriate.	Allow surface-disturbing activities within special status fish species habitat only after a site-specific analysis and consultation with USFWS as appropriate.

2.3.4 Lands with Wilderness Characteristics

						Lands with Wilderness Characteristics (WC)				
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal WC:1 Protect, preserve, and maintain the appearance of naturalness and outstanding opportunities for solitude and/or primitive and unconfined recreation within lands with wilderness characteristics, as appropriate.				
						MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE				
1040	WC:1	X	X	X	X	No similar action.	Allow access to and maintenance of existing livestock grazing or authorized administrative facilities (e.g., corral, fencing, weather station, water developments, land treatments) in lands managed for the protection of wilderness characteristics.	Same as Alternative B.	No similar action.	No similar action.
1041	WC:1	X	X	X	X	No similar action.	Allow excavation of cultural and paleontological sites in lands managed for the protection of wilderness characteristics, as well as other similar scientific uses, conditional on whether the site can return to a natural appearance upon project's completion. Use of portable, handheld motorized tools such as jackhammers and demolition saws would be allowable on a case-by-case basis.	Same as Alternative B.	No similar action.	No similar action.

Lands with Wilderness Characteristics (WC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1042	WC:1	X	X	X	X	No previous decisions. The 2000 MMP identified prescriptions for management zones. Lands with wilderness characteristics (Map 5) in the "Outback" and "Primitive" zones are generally subject to management actions that would also provide de facto protection of wilderness characteristics.	Protect all identified lands with wilderness characteristics (559,521 acres) as a priority over managing these lands for other uses (Map 6). Within these lands: i. Recommend withdrawal from mineral entry (KEPA only). ii. Close to mineral leasing (KEPA only). iii. Designate as ROW exclusion areas. iv. Designate as closed OHV area. v. Close to mineral material disposals. vi. Exclude surface-disturbing commercial uses (e.g., commercial wood-cutting permits). Consider allowing SRPs and minimum impact film permits where wilderness characteristics will not be degraded. vii. Designate as VRM Class I. viii. Prohibit vegetation treatments. ix. Restrict construction of new structures and facilities unrelated to the preservation or enhancement of wilderness characteristics or necessary for the management of existing uses. x. Retain public lands in Federal ownership.	Allow multiple uses while applying management restrictions to reduce impacts on lands with wilderness characteristics (92,752 acres) (Map 7). Within these lands: i. Recommend withdrawal from mineral entry (KEPA only). ii. Allow mineral leasing subject to No Surface Occupancy (KEPA only). iii. Designate as ROW avoidance areas. iv. Limit motor vehicle use to designated OHV routes. v. Allow for expansion of existing mineral materials sites. vi. Allow certain commercial activities or recreational activities (e.g., SRPs, commercial or personal-use wood-cutting permits) that would not degrade an area's wilderness characteristics. vii. Designate as VRM Class II. viii. Allow vegetation treatments for the purpose of maintaining or restoring ecological condition. ix. Allow new rangeland improvements and water developments. x. Consider opportunities for land tenure adjustments if they benefit the overall management of lands with wilderness characteristics. Where identified lands with wilderness characteristics are managed for other multiple uses within GSENM, any activity would still ensure the proper care and management of the monument objects.	Do not apply any provisions specifically to protect wilderness characteristics. Manage lands with wilderness characteristics for multiple uses, subject to management actions for other resources and resource uses within this plan. Where identified lands with wilderness characteristics are managed for other multiple uses within GSENM, any activity would still ensure the proper care and management of the monument objects.	Do not apply any provisions specifically to protect wilderness characteristics. Manage lands with wilderness characteristics for multiple uses, subject to management actions for other resources and resource uses within this plan. Where identified lands with wilderness characteristics are managed for other multiple uses within GSENM, any activity would still ensure the proper care and management of the monument objects.

2.3.5 Paleontological Resources and Geology

Paleontological Resources (PA) and Geology (GE)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal PA:1 Manage paleontological resources in order to protect them and make them accessible to appropriate research and public enjoyment. **Objectives:** **PA:1.1** Continue to inventory for paleontological resources and evaluate their significance for protection, conservation, research, or interpretation. **PA:1.2** Protect known paleontological resources from destruction or degradation. This also applies to materials from public lands located in museum collections. **PA:1.3** Manage uses to prevent unnecessary damage to paleontological resources. **PA:1.4** Facilitate appropriate paleontological research to improve understanding of fossil resources. **PA:1.5** Increase public education and appreciation of paleontological resources through interpretation and dissemination of research. **Goal GE:1** Facilitate appropriate use and enjoyment of geological resources. **Objectives:** **GE:1.1** Manage uses to prevent damage to unique geological features and geomorphologic features (small-scale expressions of geological processes) and to minimize activities in high-hazard areas. **GE:1.2** Increase public education and appreciation of geologic resources through interpretation. **GE:1.3** Facilitate appropriate geologic research to improve understanding of geologic processes. **GE:1.4** Facilitate appropriate commercial and casual use of geologic resources.			

Paleontological Resources (PA) and Geology (GE)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
1043	PA:1.4 PA:1.5 GE:1.2 GE:1.3	X	X	X	X	Develop local onsite or community-based interpretation for significant sites/specimens or resources to foster an appreciation for the unique geology of the region and nature of the resource; to create opportunities for public viewing of the resources; and to promote the scientific, educational, and recreational use of fossils.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
1044	PA:1.1 PA:1.2 PA:1.3 PA:1.4 PA:1.5	X	X	X	X	No similar action.	Develop a Paleontological RMP for GSENM and certain KEPA lands with high potential for scientifically significant fossils (i.e., PFYC 4 & 5). The Paleontological RMP would include the following components • Basic structure and organization of the paleontological resource program • Protocols for inventory, collection, and protection of paleontological resources • Protocols for managing paleontological sites by class, including the identification of scientific, educational, and recreational use opportunities • Protocols for volunteer/citizen scientist involvement in paleontological resource management/research • Development of a consistent PFYC system for use throughout the Planning Area (Map 8) • Coordination with counties or municipalities on appropriate exhibits • Opportunities for local interpretation of paleontological resources • Onsite (at designated sites) or community-based interpretation for significant sites/specimens to create opportunities for public access and appreciation • Protocol for monitoring trends and conditions of paleontological sites, including prioritization for scientifically important fossils and based on threats • Collections Management Strategy including offsite specimens in museums • Coordinate with academic institutions, interested stakeholders, and appropriate State and local government, including counties and municipalities, in the development of the Paleontological RMP			
1045	PA:1.3				X	No similar action.	Open PFYC 4 and 5 areas to mineral leasing subject to controlled surface use stipulations (Maps 8).			
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
1046	PA:1.2 PA:1.3	X	X	X		Continue to inventory GSENM for paleontological resources and evaluate their potential for protection, conservation, research, or interpretation. High-use areas within GSENM will have high priority for inventory efforts. Beyond high-use areas, inventory and research efforts will be expanded to fill in the information gaps on formations and other information needs.	Conduct proactive (non-compliance-driven) inventory of GSENM for paleontological resources and evaluate their potential for protection, conservation, research, or interpretation. Areas with PFYC ratings of 4 or 5 or with potential conflicts with other resources or threats from other uses will be given priority over those areas with lower PFYC ratings or no known user conflicts/threats.	Same as Alternative B.	Same as Alternative B.	Conduct proactive (non-compliance-driven) inventory of GSENM for paleontological resources and evaluate their potential for protection, conservation, research, or interpretation. Areas with PFYC ratings of 4 or 5 or with potential conflicts with other resources or threats from other uses will be given priority over those areas with lower PFYC ratings or no known user conflicts/threats.
1047	PA:1.2 PA:1.3	X	X	X		Prohibit collection of monument resources, objects, rocks, petrified wood, fossils, plants, parts of plants, animals, fish, insects, or other invertebrate animals, bones, waste, other products from animals, or other items from within the monument.	Prohibit casual collection of all paleontological resources.	Prohibit the casual collection of common invertebrate and plant paleontological resources except in specially designated and posted areas including the following (Map 11): • Cottonwood Canyon Road, between Grosvenor Arch turnoff and the Pumphouse Spring Turnoff • Straight Cliffs along Fiftymile Mountain Casual collection in these areas would involve surface collection. Digging or excavation (i.e., surface disturbance) would not be allowed.	Same as Alternative C.	Prohibit casual collection of all paleontological resources.
1048	GE:1.4	X	X	X		Prohibit collection of monument resources, objects, rocks, petrified wood, fossils, plants, parts of plants, animals, fish, insects, or other invertebrate animals, bones, waste, other products from animals, or other items from within the monument.	Prohibit casual collection of mineral resources and petrified wood.	Prohibit casual collection of mineral resources and petrified wood within GSENM except in specially designated and posted collection areas.	Same as Alternative C.	Prohibit casual collection of mineral resources and petrified wood.

Paleontological Resources (PA) and Geology (GE)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1049	PA:1.2 PA:1.3				X	Prohibit collection of monument resources, objects, rocks, petrified wood, fossils, plants, parts of plants, animals, fish, insects, or other invertebrate animals, bones, waste, other products from animals, or other items from within the monument.	Prohibit casual collection of all paleontological resources.	Allow casual collection of common invertebrate and plant paleontological resources for personal (non-commercial) use except in those areas where prohibited or posted as no collection. Close the following areas to casual collection (Map 11): • Bull Dog (420 acres) • Camp Flats (6,226 acres) • Henderson Canyon (771 acres) • Paria (18,676 acres) • The Blues (54 acres) • Tibbett Head (18,364 acres)	Allow casual surface collection of common invertebrate and plant paleontological resources for personal (non-commercial) use without permits unless such resources are of critical scientific or recreational value and need to be protected, or where collection is incompatible with other resource protection. Close the following areas to casual collection (Map 12): • Camp Flats (6,226 acres) • Tibbett Head (18,364 acres)	Allow casual surface collection of common invertebrate and plant paleontological resources for personal (non-commercial) use without permits unless such resources are of critical scientific or recreational value and need to be protected, or where collection is incompatible with other resource protection. Close the following areas to casual collection (Map 13): • Camp Flats (6,226 acres) • Tibbett Head (18,364 acres)
1050	GE:1.4				X	Prohibit collection of resources, objects, rocks, petrified wood, fossils, plants, parts of plants, animals, fish, insects, or other invertebrate animals, bones, waste, other products from animals, or other items.	Prohibit casual collection of rocks, minerals, and petrified wood.	Allow casual collection of rocks, minerals, and petrified wood except where prohibited and posted. Close the following areas to casual collection (Map 11): • North Circle Cliffs Fossil Wood Area (3,364 acres)	Allow casual collection of rocks, minerals, and petrified wood except where prohibited and posted.	Allow casual collection of rocks, minerals, and petrified wood except where prohibited and posted.
1051	PA:1.2 PA:1.3	X			X	No similar action.	Manage the Wolverine Petrified Wood area as an OHV closed area.	Same as Alternative B.	Manage the Wolverine Petrified Wood area as an OHV limited area.	Manage the Wolverine Petrified Wood area as an OHV limited area.

2.3.6 Soil and Water Resources

2.3.6.1 Soil Resources

Soil Resources (SR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal SR:1 Manage uses to prevent damage to and degradation of soil resources and to ensure that soil health is maintained or improved. **Objectives:** **SR:1.1** Maintain, improve, and/or restore overall watershed health to reduce erosion, stream sedimentation, and salinization of water, with particular emphasis on the Colorado River System. **SR:1.2** Ensure soils exhibit infiltration, permeability, and erosion rates appropriate for the soil type, climate, and landform. **SR:1.3** Maintain or enhance soil stability, productivity, and infiltration to prevent accelerated erosion and to provide for optimal plant growth and the site's potential. **SR:1.4** Maintain, improve, and restore areas of biological soil crust appropriate for the soil type, climate, and landform. **Goal SR:2** Provide opportunities for education and research. **Objectives:** **SR:2.1** Increase public education and appreciation of soils and biological soil crusts through interpretation. **SR:2.2** Facilitate appropriate research to improve understanding and management of soil resources and biological soil crusts.			

Soil Resources (SR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
1052	SR:1.4 SR:2.2 SR:2.1	X	X	X	X	No similar action.	Prohibit surface-disturbing activities in fragile or sensitive soil areas (Map 14).	Prior to allowing surface disturbance in fragile or sensitive soil areas (e.g., saline soils, highly erosive, late successional biological, expansive), operators would be required to submit a soil health and restoration plan that includes site-specific mitigation measures for activities proposed in fragile or sensitive soil areas. The BLM must approve the plan before surface-disturbing activities would be authorized. The BLM may allow surface disturbance in fragile or sensitive soil areas as long as impacts would be mitigated.	Same as Alternative C.	Prior to allowing surface disturbance in fragile or sensitive soil areas (e.g., saline soils, highly erosive, late successional biological, expansive), operators may be required to submit a soil health and restoration plan that includes site-specific mitigation measures for activities proposed in fragile or sensitive soil areas. If required, the BLM must approve the plan before surface-disturbing activities would be authorized. The BLM may allow surface disturbance in fragile or sensitive soil areas as long as impacts would be mitigated.
1053	SR:1.3	X	X	X	X	No similar action.	Require measures to stabilize soils and minimize surface water runoff for slopes greater than 5%, both during project activities and following project completion. Prohibit surface-disturbing activities on slopes greater than 30% (Map 15). This includes a No Surface Occupancy stipulation with no exceptions. Manage as a ROW exclusion area.	Require measures to stabilize soils and minimize surface water runoff for slopes greater than 10%, both during project activities and following project completion. Prohibit surface-disturbing activities on slopes greater than 30% (Map 15). This includes a No Surface Occupancy stipulation, with exceptions considered. Manage as a ROW avoidance area.	Require measures to stabilize soils and minimize surface water runoff for slopes greater than 15%, both during project activities and following project completion. Prohibit surface-disturbing activities on slopes greater than 30% (Map 15). This includes a No Surface Occupancy stipulation, with exceptions considered. Manage as a ROW avoidance area.	Require measures to stabilize soils and minimize surface water runoff for slopes greater than 15%, both during project activities and following project completion. Prohibit surface-disturbing activities on slopes greater than 30% (Map 15), with exceptions considered. This includes a No Surface Occupancy stipulation, with exceptions considered. Manage as a ROW avoidance area.
1054	SR:1.1 SR:1.2 SR:1.3 SR:1.4	X	X	X	X	No similar action.	Exclude new ROWs (including communication sites) on fragile, sensitive, or otherwise unstable soils such as areas with or prone to landslides and slumps, with exceptions considered.	Avoid new ROWs (including communication sites) on fragile, sensitive, or otherwise unstable soils such as areas with or prone to landslides and slumps, with exceptions considered.	No similar action.	No similar action.
1055	SR:1.1 SR:1.2 SR:1.3 SR:1.4	X	X	X		GSENM: The BLM will apply procedures to protect soils from accelerated or unnatural erosion in any ground-disturbing activity, including route maintenance and restoration. The effects of activities such as grazing developments, mineral exploration or development, or water developments will be analyzed through the preparation of project-specific NEPA documents. This process will include inventories for affected resources and the identification of mitigation measures. Prior to any ground-disturbing activity, the potential effects on biological soil crusts will be considered and steps will be taken to avoid impacts on their function, health, and distribution. Long-term research toward preservation and restoration of soils will be part of the adaptive management framework.	GSENM: Same as Alternative A. In addition, pastures with more than 50% of soils with moderate soil degradation susceptibility would be adaptively managed to minimize degradation. Reduce grazing impacts on crust and soils with moderate soil degradation susceptibility: • Change season of use for grazing as appropriate for biological soil crust and soil degradation susceptibility. In general, light to moderate stocking in early- to mid-wet season is recommended on biological soil crust and soils with moderate soil degradation susceptibility. Change season of use so that grazing does not occur during times when crusts are most susceptible to damage. Sandy soils are most susceptible when wet or moist. Clay is most susceptible when dry. When necessary, use exclosures and fencing to protect sites with biological soil crust or soils with moderate soil degradation susceptibility.	GSENM: Same as Alternative A. Glen Canyon: Same as Alternative B.	GSENM: Same as Alternative A. Glen Canyon: Same as Alternative A, except NPS, in coordination with the BLM, will take livestock management actions, including monitoring, to prevent or minimize adverse impacts on soils, soil function, and biological soil crusts per NPS management policies.	GSENM: Apply procedures to protect soils from accelerated or unnatural erosion in any ground-disturbing activity, including route maintenance and restoration. The effects of activities such as grazing developments, mineral exploration or development, or water developments will be analyzed through the preparation of project-specific NEPA documents. This process will include inventories for affected resources and the identification of mitigation measures. Prior to any ground-disturbing activity, the potential effects on biological soil crusts will be considered and steps will be taken to avoid impacts on their function, health, and distribution. Long-term research toward preservation and restoration of soils will be part of the adaptive management framework. Glen Canyon: NPS, in coordination with the BLM, will take livestock management actions, including monitoring, to prevent or minimize adverse impacts on soils, soil function, and biological soil crusts per NPS management policies.

2.3.6.2 Water Resources

Water Resources (WR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal WR:1 Ensure that appropriate quality and quantity of water resources are available for the proper care and management of objects of GSENM and resources of GSENM and KEPA. **Objectives:** **WR:1.1** Increase public education and appreciation of water resources through interpretation. **WR:1.2** Facilitate appropriate research to improve management of water resources. **WR:1.3** Maintain, enhance, and/or restore natural hydrologic functions of watersheds, including the capability to capture, store, and beneficially release water. **WR:1.4** Improve watershed conditions on eroding sites and on other sensitive watershed areas, such as riparian areas. **WR:1.5** Maintain and/or improve water quality to meet State water quality standards and the Utah Standards and Guidelines for Rangeland Health.			
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
Water Flows and Use										
1056	WR:1.3 WR:1.4 WR:1.5	X	X	X	X	Ensure that land management policies protect water resources. Because much of the water important to GSENM falls as precipitation within the monument, its continued availability can be ensured by appropriate land management policies within GSENM. The BLM will exercise its existing land management authorities to protect and maintain all available water and natural flows in GSENM. Major visitor centers and facilities will be located outside of GSENM in local communities where there will be access to municipal water systems. In general, diversions of water out of GSENM will not be permitted.	To protect and maintain all available water and natural flows, including water flowing into GSENM and KEPA from adjacent lands (Map 16), locate major visitor centers in local communities where there will be access to municipal water systems.	To protect and maintain all available water and natural flows, including water flowing into GSENM and KEPA from adjacent lands (Map 16), encourage the development of major visitor centers and facilities in nearby communities.	To protect and maintain all available water and natural flows, including water flowing into GSENM and KEPA from adjacent lands (Map 16), encourage the development of major visitor centers and facilities in nearby communities where there will be access to municipal water systems.	To protect and maintain water and natural flows, including water flowing into GSENM and KEPA from adjacent lands (Map 16), the BLM will exercise its existing land management authorities to protect and maintain available water and natural flows into and out of GSENM and KEPA.
1057	WR:1.3 WR:1.4 WR:1.5	X	X	X		No similar action.	Do not develop water sources for beneficial recreation and visitor-related uses in high-use remote areas, such as trailheads and recreational facilities.	Allow water sources to be developed for beneficial recreation and visitor-related uses in high-use remote areas, such as trailheads and recreational facilities.	Same as Alternative C.	Allow water sources to be developed for beneficial recreation and visitor-related uses in high-use remote areas, such as trailheads and recreational facilities.
1058	WR:1.4 WR:1.5	X	X	X		Use water development as a management tool throughout GSENM for the following purposes: better distribution of livestock when deemed to have an overall beneficial effect on monument resources, including water sources or riparian areas; or restoration or management of native species or populations. These can be done only when a NEPA analysis determines this tool to be the best means of achieving the above objectives and only when the water development would not dewater streams or springs. Developments will not be permitted to increase overall livestock numbers. Maintenance of existing developments can continue, but may require NEPA analysis and must be consistent with the objectives of this plan.	Allow maintenance of existing water developments. Prohibit new water developments for livestock and wildlife.	Allow new water developments and maintenance of existing water developments to improve livestock and wildlife distribution.	Same as Alternative C.	Allow new water developments and maintenance of existing water developments to improve livestock and wildlife distribution.

Water Resources (WR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Management of Water Quality and Watershed Health										
1059	WR:1.5	X	X	X	X	No similar action.	Prohibit surface-disturbing actions in Drinking Water Source Protection Zones and culinary water sources. Develop strategies to mitigate any existing BLM-authorized activities that pose a threat to public water systems (Map 17).	Allow surface-disturbing activities within Drinking Water Source Protection Zones where the disturbance does not degrade the resource (Map 17). In these areas locate permanent facilities to eliminate potential contamination or pollution sources, and design facilities to prevent contaminated discharges to groundwater.	Same as Alternative C.	GSENM: Avoid surface-disturbing actions in Drinking Water Source Protection Zones and culinary water sources. Develop strategies to mitigate any existing BLM-authorized activities that pose a threat to public water systems (Map 17). KEPA: Allow surface-disturbing activities within Drinking Water Source Protection Zones where the disturbance does not degrade the resource (Map 17). In these areas locate permanent facilities to eliminate potential contamination or pollution sources, and design facilities to prevent contaminated discharges to groundwater.

2.3.7 Vegetation and Fire and Fuels Management

2.3.7.1 Vegetation

Vegetation (VG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal VG:1 Ensure a mosaic of desired vegetation communities is present across the landscape with diversity of species, canopy, density, and age class in accordance with ecological site potential. Protect, enhance, and/or restore ecological processes and functions. **Objectives:** **VG:1.1** Manage sagebrush communities to provide quality habitat necessary to maintain sustainable populations of sagebrush obligate species. **VG:1.2** Prevent net loss of properly functioning sagebrush-steppe habitat. **VG:1.3** Prevent establishment of new invasive species through early detection and rapid response actions. **VG:1.4** Restore native species to meet desired plant community objectives. **VG:1.5** Maintain healthy stands of ponderosa pine. **VG:1.6** Maintain and/or restore riparian areas to proper functioning condition, or to making significant progress toward proper functioning condition, where BLM-managed or BLM-authorized activities have been identified as contributing to riparian impairment. **VG:1.7** Ensure water quantity and quality for multiple-use management and functioning, healthy riparian and upland systems. **VG:1.8** Manage relict plant communities and hanging gardens to maintain and enhance biological diversity. **VG:1.9** Manage undesirable and desirable vegetation with the goal of improving overall watershed conditions. **VG:1.10** Create and maintain a mosaic of non-invasive perennial and annual vegetation communities across the landscape with diversity of species, canopy, density, and different stages of growth.			
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
1060	VG:1.6	X	X	X	X	Prohibit construction of new recreation trails in riparian areas wherever possible. Where this is not possible, design trails to minimize impacts by placing trails away from streams, using soil stabilization structures to prevent erosion, and planting native plants in areas where vegetation has been removed.				
1061	VG:1.3 VG:1.10	X	X	X	X	Control noxious weed species and prevent the introduction of new invasive species in conjunction with Cooperative Weed Management Areas.				
1062	VG:1.8	X	X	X		Prohibit vegetation restoration methods in relict plant communities and hanging gardens, unless needed for removal of noxious weed species.				
1063	VG:1.8	X	X	X		Prohibit new water developments in relict plant communities and hanging gardens. Allow maintenance activities if these resources are not affected.				
1064	VG:1.8	X	X	X		Prohibit parking areas or other recreation facilities in relict plant communities and hanging gardens.				
1065	VG:1.8	X	X	X		Prohibit camping, overnight stays, and campfires in relict plant communities and hanging gardens. Make exceptions for scientific and research purposes as determined by the authorized officer.				

Vegetation (VG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1066	VG:1.8	X	X	X		Prohibit communication sites and utility ROWs in relict plant communities and hanging gardens.				
1067	VG:1.3	X	X	X	X	Allow approved weed-control methods to all invasive species in an integrated weed management program (including but not limited to: preventive management; education; and mechanical, biological, wildland or prescribed fire, and chemical techniques).				
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
General Vegetation										
1068	VG:1.6				X	No similar action.	Retain riparian areas in the public ownership.	Same as Alternative B.	Same as Alternative B.	Retain riparian areas in the public ownership; the authorized officer may only consider exceptions if the results would benefit management goals and objectives.
1069	VG:1.4	X	X	X	X	Manage livestock grazing after native seedings are established to ensure the survival of the native plants. The livestock exclusion period required to allow full establishment of seeded native species and recovery of surviving plants may be more than 2 years. Vegetation treatment monitoring data will be evaluated to determine when objectives for the seedings are met and grazing can be resumed.	Manage livestock grazing after native seeding restoration to ensure the survival of the native plants. In post-disturbance areas, suspend livestock grazing for at least two growing seasons or until the majority of native plant species in the area have seeded, whichever is longer. Vegetation treatment monitoring data will be evaluated to determine when objectives for the seedings are met and grazing can be resumed.	After disturbance, manage livestock grazing practices until seedings are established in order to promote the survival of plants. Generally, areas will be rested from livestock grazing for two growing seasons or until site objectives are met. Vegetation treatment monitoring data will be evaluated to determine when objectives for the seedings are met and grazing can be resumed.	Same as Alternative C.	After surface disturbance, manage livestock grazing practices until seedings are established in order to promote the survival of plants. Generally, areas will be rested from livestock grazing for two growing seasons or until site objectives are met. Vegetation treatment monitoring data will be evaluated to determine when objectives for the seedings are met and grazing can be resumed.
1070	VG:1.4 VG:1.10	X	X	X	X	Do not use nonnative plants to increase forage for livestock and wildlife.	Same as Alternative A.	Prioritize the use of native seeds for restoration of nonstructural range improvements based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable nonnative seeds may be used in limited situations as long as they support ecological objectives and protect GSENM/KEPA resources (e.g., stabilize soils). Re-establishment of appropriate species, relative to site potential, should be the principle objective for restoration efforts.	Consistent with Federal policy, prioritize the use of native species. Allow the use of nonnative species where necessary to optimize land health, forage, and productivity in nonstructural range improvements.	Consistent with Federal policy, prioritize the use of native species. Allow the use of nonnative species where necessary to optimize land health, forage, and productivity in nonstructural range improvements.
1071	VG:1.4	X	X	X	X	Follow guidance for Vegetation Restoration Methods in the MMP. Mechanical methods, including manual pulling and the use of hand tools, such as chainsaws, machetes, and pruners, may be allowed throughout GSENM.	Same as Alternative A. Plus, in areas available for livestock grazing, utilize native species only for restoration (including maintenance) of sites formerly seeded to exotic species. This includes nonstructural range improvements within GSENM that were established prior to GSENM designation. Restore existing nonstructural range improvements (seedings). Restoration (including maintenance) of sites formerly seeded to exotic species will utilize native species only. This includes nonstructural range improvements that were established prior to GSENM designation.	Same as Alternative A. Plus, in areas available for livestock grazing, restore existing nonstructural range improvements (seedings) using a mix of native and nonnative seeds.	In areas available for livestock grazing, restore existing nonstructural range improvements (seedings) using a mix of native and nonnative species.	In areas available for livestock grazing, restore existing nonstructural range improvements (seedings) using a mix of native and nonnative species.
1072	VG:1.8	X	X	X	X	Prohibit surface-disturbing research in relict plant communities and hanging gardens.	Same as Alternative A.	Allow surface-disturbing research in relict plant communities if the research is designed to promote the overall health and understanding of these areas.	Allow surface-disturbing research in relict plant communities and hanging gardens with implementation of vegetation BMPs (Appendix G [*Best Management Practices*]).	Allow surface-disturbing research in relict plant communities and hanging gardens with implementation of vegetation BMPs (Appendix G [*Best Management Practices*]).

Vegetation (VG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1073	VG:1.3 VG:1.4	X	X	X	X	No similar action.	The permittee(s), working with the BLM and per BLM weed management policies, will maintain areas free of noxious and nonnative invasive plant species around structural range improvements.	No similar action.	No similar action.	No similar action.
						Riparian and Wetland Areas				
1074	VG:1.6 VG:1.7	X	X	X	X	No similar action.	Prohibit surface-disturbing activities and permanent facilities within 0.5 mile (2,640 feet) of riparian/wetland areas[2] (Map 18). Apply a No Surface Occupancy stipulation and ROWs avoidance.	Avoid new surface-disturbing activities within 330 feet of riparian/wetland areas[2] unless it could be shown that (1) there are no practical alternatives (e.g., a designated utility corridor), (2) all long-term impacts could be fully mitigated, or (3) the activity would benefit and enhance the riparian area (Map 19). Apply Controlled Surface Use on Federal mineral leasing and ROWs avoidance.	Same as Alternative C.	Avoid new surface-disturbing activities within 330 feet of riparian/wetland areas[1] unless it could be shown that (1) there are no practical alternatives (e.g., a designated utility corridor), (2) all long-term impacts could be fully mitigated, or (3) the activity would benefit and enhance the riparian area (Map 19). Apply Controlled Surface Use on Federal mineral leasing and ROWs avoidance.
						Plant and Seed Collection				
1075	VG:1.6	X	X	X	X	Preclude commercial seed collection.	Allow collection of commercial seed, except in WSAs and Lands with Wilderness Characteristics.	Allow commercial seed collection. Areas and species available for commercial collection would be determined as climatic conditions allow, in accordance with BLM guidance and policy.	Same as Alternative C.	Allow commercial seed collection. Areas and species available for commercial collection would be determined as climatic conditions allow, in accordance with BLM guidance and policy.
1076	VG:1.6	X	X	X	X	Preclude commercial use of vegetative materials.	Allow commercial use of vegetative materials, except in WSAs and Lands with Wilderness Characteristics.	Allow commercial use of vegetation materials (excluding seed collection, which is addressed above; pine nut harvest) and collection in specified areas identified by permit as climatic conditions allow. Commercial collection and forest product removal in WSAs would not be allowed.	Same as Alternative C.	Allow commercial and non-commercial use of vegetation materials (excluding seed collection, fuelwood collection, and pine nut harvest) and collection in specified areas identified by permit as climatic conditions allow and in accordance with applicable policies, guidance, and regulations. Commercial collection and forest product removal in WSAs would not be allowed.
1077	VG:1.6	X	X	X	X	No similar action.	Close riparian areas to collection/harvesting of vegetative materials except for traditional Native American and administrative use.	Allow the collection/harvesting of vegetative materials in riparian areas if climatic conditions allow.	Same as Alternative C.	Allow the collection/harvesting of vegetative materials in riparian areas if climatic conditions allow.

[1] Note that riparian and wetland areas depicted on Map 18 and Map 19 are based on regional data sets and may not accurately reflect on-the-ground wetlands and riparian areas. Site-specific assessments of wetland and riparian occurrence would be conducted if development proposals or projects are considered in these areas.

Vegetation (VG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Vegetation Restoration Treatments				
1078	VG: 1.3 VG:1.4 VG:1.6	X	X	X	X	Allow the use of machinery (e.g., roller chopping, chaining, plowing, discing) unless limited by management for other resources and allocations (e.g., Lands with Wilderness Characteristics Management). Chaining has been used in the past to remove pinyon and juniper prior to reseeding with perennial grasses. Due to the potential for irreversible impacts on resources, such as archaeological sites and artifacts and paleontological resources, this treatment method will not be used to remove pinyon and juniper. It may be allowed to cover rehabilitation seed mixes with soil after wildfires only where: • Noxious weeds and invasive nonnative species are presenting a significant threat to GSENM resources or watershed damage could occur if the burned area is not reseeded. • It can be demonstrated that GSENM resources will not be detrimentally affected (i.e., completion of full archaeological, paleontological, threatened and endangered species, and other resource clearance and consultation). • It is determined that seed cover is necessary for the growth of the native species proposed for seeding, and other less-surface-disturbing measures of covering seed are not available or cannot be applied in a timely manner. Visual impacts of chaining will also be minimized near routes and other points of concern by covering the native seed mix with harrows or light chains. The GSENM Advisory Committee will be consulted before the use of machinery for treatments is permitted.	Do not allow vegetation treatments unless necessary for the protection of life or property, or if a determination has been made that an area is not meeting rangeland health standards and livestock grazing is not a contributing or causal factor. In limited circumstances, where vegetation treatments are allowed: • Only use non-intensive vegetation treatments (e.g., hand thinning, lop and scatter). • Focus treatments on removal of pinyon-juniper woodlands. Prohibit removal of sagebrush or other understory plant communities. • Only use native seeds and plants during restoration. • Mimic natural processes to the maximum degree possible. • Design treatments to address underlying or problematic causes identified in rangeland health assessments. This decision would also apply to nonstructural range improvements.	Allow vegetation treatments using all methods and tools except chaining (e.g., prescribed fire, mechanical, chemical, biological, woodland product removal). Design treatments to promote land health; increase vegetation cover, soil productivity, and water infiltration; and reduce soil erosion. This decision would also apply to nonstructural range improvements.	Use the full range of vegetation treatment methods and tools (e.g., chaining, prescribed fire, mechanical, chemical, biological, woodland product removal). Prioritize treatments in areas where removal of woodland products would improve rangeland health, wildlife habitat, and forage. This decision would also apply to nonstructural range improvements.	Use the full range of vegetation treatment methods and tools (e.g., chaining, prescribed fire, mechanical, chemical, biological, woodland product removal). Prioritize treatments in areas where removal of woodland products would improve rangeland health, wildlife habitat, and forage. This decision would also apply to nonstructural range improvements.

2.3.7.2 Fire and Fuels Management

Fire and Fuels Management (FF)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal FF:1 Protect life, property, and resource values by responding to wildland fires based on ecological, social, and legal consequences of the fire and the circumstances under which it occurs. **Objectives:** **FF:1.1** Make firefighter and public safety the primary goal in all fire management decisions and actions. **FF:1.2** Use wildland fire to protect, maintain, and enhance resources and, when possible, allow wildland fire to function in its natural ecological role. **FF:1.3** Reduce hazardous fuels to restore ecosystems; protect human, natural, and cultural resources; and reduce the threat of wildfire to communities. **FF:1.4** Suppress fires at minimum cost, taking into account firefighter and public safety and benefits and values to be protected, consistent with resource objectives. **FF:1.5** Develop a Fire Management Plan, based on a foundation of sound science, for every area with burnable vegetation. **FF:1.6** Undertake emergency stabilization, rehabilitation, and restoration efforts to protect and sustain resources, public health and safety, and community infrastructure. **FF:1.7** Would work together with BLM partners and other affected groups and individuals to reduce risks to communities and restore ecosystems. **FF:1.8** Maintain the general DWFC by having ecosystems that are at a low risk of losing ecosystem components following wildfire and that function within their historical range. In terms of FRCC, the DWFC outside WUI is to trend to a lower FRCC using the least intrusive methods possible. In other words, the DWFC is to move lands in FRCC 3 to FRCC 2 and lands in FRCC 2 to FRCC 1 through fire and non-fire treatments where wildland fire use is the preferred method of treatment, when feasible. Inside the WUI, the general DWFC is to have less potential for values to be threatened by wildland fire, usually through some modification of fuels.			
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
1079	FF:1	X	X	X	X	Use the Fire Management Units identified on Map 21 to assist in organizing fire management information from the RMP.				
1080	FF:1	X	X	X	X	Consider all available tools when applying emergency stabilization and rehabilitation, as appropriate.				
1081	FF:1	X	X	X	X	The area is available to use prescribed fire to meet resource objectives; management direction would be considered on an ignition-by-ignition basis, considering values at risk and benefits.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
1082	FF:1	X	X	X	X	The Southern Utah Support Area FMP describes current management related to fire suppression, resource objectives, and natural Fire. Refer to BLM 2005c for a detailed description of current management.	Modify the existing FMP to be consistent with existing RMP decisions			

2.3.8 Visual Resources, Night Skies, and Natural Soundscapes

Visual Resources, Night Skies, and Natural Soundscapes (VR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal VR:1 Manage uses to protect and maintain the quality of the scenic values. **Goal VR:2** Manage uses to protect the quality of night sky and natural soundscape resources. **Goal VR:3** Increase public awareness and appreciation of and engagement with scenic, night sky, and natural soundscape resources. **Goal VR:4** Assign one of the following VRM Objectives to all lands within the Planning Area to allow for a range of visual value protection and resource use: **VR:4.1** VRM Class I – Preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. **VR:4.2** VRM Class II – Retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. **VR:4.3** VRM Class III – Partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. **VR:4.4** VRM Class IV – 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. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.			
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
1083	VR:1	X	X	X	X	To the extent practicable and as the opportunity arises, bring existing visual contrasts remaining from past land uses into VRM class conformance.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
1084	VR:2	X	X	X	X	No similar action.	Develop interpretive materials/programs to educate and engage the public about scenic, night sky, and natural soundscape resources.			
1085	VR:2	X	X	X	X	No similar action.	Develop a natural soundscape management plan.			

Visual Resources, Night Skies, and Natural Soundscapes (VR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1086	VR:2	X	X	X	X	No similar action.	Inventory and monitor night skies and natural soundscapes in partnership with local communities, universities, other agencies, and stakeholders.			
						MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE				
						Visual Resources				
1087	VR:1	X	X	X		Within GSENM, maintain existing VRM Class designations for BLM-administered surface lands in the Planning Area (Map 22): • VRM Class I: 0 acres • VRM Class II: 751,240 acres • VRM Class III: 251,642 acres • VRM Class IV: 0 acres	Within GSENM, manage the following VRM classifications (Map 23): • VRM Class I: 851,413 acres • VRM Class II: 120,295 acres • VRM Class III: 32,040 acres • VRM Class IV: 0 acres	Within GSENM, manage the following VRM classifications (Map 24): • VRM Class I: 671,452 acres • VRM Class II: 237,580 acres • VRM Class III: 26,776 acres • VRM Class IV: 67,854 acres	Within GSENM, manage the following VRM classifications (Map 25): • VRM Class I: 671,452 acres • VRM Class II: 217,149 acres • VRM Class III: 36,857 acres • VRM Class IV: 78,173 acres	Within GSENM, manage the following VRM classifications (Map 26): • VRM Class I: 671,452 acres • VRM Class II: 217,110 acres • VRM Class III: 36,896 acres • VRM Class IV: 78,173 acres An exception to VRM Class II would be allowed for public or recreation infrastructure, such as trailheads, campgrounds, contact stations, and toilet facilities, when this infrastructure is consistent with the proper care and management of monument objects (in GSENM) and/or other management objectives in these plans. Exception areas would be managed to VRM Class III objectives. The contrast would be allowed only to the extent needed for the function of the facility, which would reflect design excellence and be a positive element for the built environment following existing color, line, form, and texture. Structures would blend into the landscape while retaining functionality.
1088	VR:1				X	Within KEPA, maintain existing VRM Class designations for BLM-administered surface lands in the Planning Area (Map 22): • VRM Class I: 0 acres • VRM Class II: 520,620 acres • VRM Class III: 339,815 acres • VRM Class IV: 0 acres	Within KEPA, manage the following VRM classifications (Map 23): • VRM Class I: 589,074 acres • VRM Class II: 197,159 acres • VRM Class III: 37,860 acres • VRM Class IV: 38,232 acres	Within KEPA, manage the following VRM classifications (Map 24): • VRM Class I: 209,707 acres • VRM Class II: 419,081 acres • VRM Class III: 131,474 acres • VRM Class IV: 101,995 acres	Within KEPA, manage the following VRM classifications (Map 25): • VRM Class I: 209,707 acres • VRM Class II: 207,011 acres • VRM Class III: 308,320 acres • VRM Class IV: 137,207 acres	Within KEPA, manage the following VRM classifications (Map 26): • VRM Class I: 209,707 acres • VRM Class II: 205,347 acres • VRM Class III: 310,031 acres • VRM Class IV: 137,159 acres
1089	VR:1	X	X	X	X	The Monument Manager may allow temporary projects, such as research projects, to exceed VRM standards in Class II and III areas if the project terminates within 2 years of initiation. Rehabilitation will begin at the end of the 2-year period. During the temporary project, the Monument Manager may require phased mitigation to better conform with prescribed VRM standards.	No similar action.	Allow temporary projects to exceed VRM objectives, if the project terminates within 2 years of initiation. Rehabilitation will be ongoing throughout project implementation if possible or begin at the end of the 2-year period. During the temporary project, the authorized officer may require phased mitigation to better conform with VRM objectives.	Same as Alternative C, except allow temporary projects for up to 3 years.	Allow temporary projects, such as research projects and meteorological monitoring stations, to exceed VRM objectives, if the project terminates within 3 years of initiation. Rehabilitation will be ongoing throughout project implementation if possible or begin at the end of the 3-year period. During the temporary project, the authorized officer may require phased mitigation to better conform with VRM objectives.
						Night Skies				
1090	VR:2	X	X	X	X	Seek to prevent light pollution within GSENM. No actions will be proposed within GSENM that will contribute to light pollution. Work closely with the surrounding communities to minimize light pollution.	Do not permit/authorize actions that will contribute to an increase in light pollution.	Within GSENM, do not authorize projects that contribute to an increase in light pollution. Within KEPA, utilize BMPs to minimize light pollution.	Implement BMPs in coordination with stakeholders to eliminate or minimize light pollution.	Implement BMPs in coordination with stakeholders to eliminate or minimize light pollution.

Visual Resources, Night Skies, and Natural Soundscapes (VR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
1091	VR:2	X	X	X	X	No similar action.	Develop an activity plan for designation as an International Dark-Sky Association Dark Sky Sanctuary. The activity plan will include development and adoption of a comprehensive Lightscape Management Plan, Lighting Inventory, and Dark Sky BMPs consistent with requirements set forth by the International Dark-Sky Association.	Protect night sky vistas through implementation of BMPs and coordination with local communities and stakeholders.	Within GSENM, same as Alternative B. Within KEPA, same as Alternative C.	Protect night sky vistas through implementation of BMPs and coordination with local communities and stakeholders.

2.3.9 Wild Horses

						Wild Horses (WH)				
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal WH:1 Manage wild horses in accordance with the Wild Free-Roaming Horse and Burro Act of 1971 **Objectives:** **WH:1.1** Retain the Harvey's Fear and Moody-Wagon Box Mesa Herd Areas in accordance with the wild Free-Roaming Horse and Burro Act of 1971. **WH:1.2** The Harvey's Fear and Moody-Wagon Box Mesa Herd Areas will not be managed for wild horses.				
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
1092	WH:1.1	X	X		X	Retain the Harvey's Fear and Moody-Wagon Box Mesa Herd Areas in accordance with the wild Free-Roaming Horse and Burro Act of 1971 (Map 32).				
1093	WH:1.1	X	X		X	Conduct population surveys of wild horses within herd areas every 3 to 4 years.				
1094	WH: 1.2	X	X		X	Remove wild horses from the Harvey's Fear and Moody-Wagon Box Mesa Herd Areas.				
1095	WH:1.1 WH: 1.2	X	X	X	X	Remove wild horses from public lands that are outside the herd areas.				

2.3.10 Forestry and Woodland Products

Forestry and Woodland Products (FP)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal FP:1 Promote, sustain, and improve forest health. **Objectives:** **FP:1.1** Maintain healthy forest/woodlands and populations of other plants. **FP:1.2** Improve forest and woodland health to protect watershed values and support wildlife habitat requirements. **FP:1.3** Manage areas with ponderosa pine and aspen to maintain and improve the stand health.				
MANAGEMENT ACTION COMMON TO ALL ACTION ALTERNATIVES										
1096	FP:1.1	X	X	X	X	No similar action.	Permit harvesting of woodland products in riparian areas for the maintenance and/or improvement of riparian ecosystems.			
1097	FP:1.1	X	X	X	X	No similar action.	Prohibit the removal of ponderosa pine for Christmas trees.			
1098	FP:1.1	X	X	X	X	No similar action.	Allow the sale of forest treatment residues as secondary wood products or biomass.			

Forestry and Woodland Products (FP)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
1099	FP:1.1	X	X	X	X	No commercial timber harvesting is authorized within the Planning Area.	GSENM: Same as Alternative A. KEPA: Allow commercial timber harvesting for the purposes of promoting or sustaining forest health.	GSENM: Allow commercial timber harvesting for the purposes of promoting or sustaining forest health across the entirety of the monument units. KEPA: Same as Alternative B.	GSENM: Same as Alternative C. KEPA: Same as Alternative B.	GSENM: Allow commercial and non-commercial timber harvesting for the purposes of promoting or sustaining forest health across the entirety of the monument units. KEPA: Allow commercial and non-commercial timber harvesting for the purposes of promoting or sustaining forest health.
1100	FP:1.1	X	X	X	X	Allow by permit fuelwood harvesting, post cutting, and Christmas tree cutting only within designated areas (Map 33). Commercial fuelwood cutting will be limited and authorized in designated areas only. There are currently two forestry product areas located in GSENM: Rock Springs Bench area and Buckskin Mountain area.	Limit Commercial and non-commercial fuelwood harvesting, post cutting, and Christmas tree cutting to new or existing restoration areas prior and after treatments (KEPA). Close all areas to commercial fuelwood harvesting, post cutting, and Christmas tree cutting (GSENM).	Allow commercial and non-commercial fuelwood harvesting, post cutting, and Christmas tree cutting except in WSAs and areas posted or signed as closed in order to meet forestry goals and objectives otherwise designated or subject to a stipulation.	Same as Alternative C.	Allow commercial and non-commercial fuelwood harvesting, post cutting, and Christmas tree cutting except in WSAs and areas posted or signed as closed in order to meet forestry goals and objectives otherwise designated or subject to a stipulation.

2.3.11 Lands and Realty and Renewable Energy

2.3.11.1 Lands and Realty

Lands and Realty (LR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal LR:1 Manage ROWs, land tenure adjustments, withdrawals, and use of BLM-administered surface lands to meet the needs of internal and external customers and to preserve important resource values. **Objectives:** **LR:1.1** Work with nearby communities and other land management agencies to pursue management activities that cooperatively accomplish the objectives of each agency within the constraints of Federal law. **LR:1.2** Utilize energy and utility corridors to focus placement of new major ROWs for energy, utility, and transportation systems. **LR:1.3** Retain in public ownership public lands that enhance multiple-use management, allow access to public lands, contain sensitive or rare resources, or have significant Native American concerns. **LR:1.4** Acquire lands or interests in lands to complement existing resource values and uses. **LR:1.5** Confirm areas that should be withdrawn from mineral entry to meet resource goals and objectives. **LR:1.6** Make public lands available for ROWs, permits, and leases. The suitability for these land actions would be judged on a case-by-case basis.			
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
2001	LR:1.1	X	X	X		Authorize only one access route to private land parcels unless public safety or local ordinances warrant additional routes. Private land owners must coordinate the development of access routes across public lands in order to prevent a proliferation of routes.				
2002	LR:1.1	X	X	X		Recognize valid land authorizations that existed prior to establishment of GSENM and allow use of such authorizations subject to the terms and conditions of the authorizing document. Where these uses conflict with the protection of GSENM resources, and where legally possible, adjust leases, permits, or easements to eliminate or minimize adverse impacts.				
2003	LR:1.1	X	X	X		Consider land exchanges and acquisitions so long as the current owner is a willing participant and so long as the action is in the public interest and is in accordance with other management goals and objectives of this plan. The action must also result in a net gain of objects and values within GSENM, such as wildlife habitat, cultural sites, riparian areas, live water, threatened or endangered species habitat, or areas key to the maintenance of productive ecosystems. Priority will be given to actions that meet one or more of the following criteria: • Ensures the accessibility of public lands in areas where access is needed and cannot otherwise be obtained. • Is essential to allow effective management of public lands. Results in the acquisition of lands that serve a National priority as identified in National policy directives. All land exchanges and acquisitions will be subject to valid existing rights as determined by the BLM. When evaluating whether exchange or acquisition of a particular parcel is appropriate, the increase or decrease of public access for outdoor recreation—including hunting and fishing—will be considered in accordance with Secretarial Order 3373 or current directives.				
2004	LR:1.6				X	Maintain 11,012 acres as designated ROW corridors in the Planning Area (Map 34). This includes Section 368 corridor 68-116 and the congressionally-designated utility corridor along Highway 89 in Kane County, which extends 240 feet north and 500 feet south of the highway centerline. Nothing in these plans will prevent the use of the congressionally designated utility corridor along Highway 89 in Kane County for its designated purpose.				

Lands and Realty (LR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
2005	LR:1.4	X	X	X	X	Retain habitat for listed threatened, endangered, and candidate species in Federal ownership unless land tenure adjustments would result in a net increase of habitat or benefit the species. All actions involving listed species or their habitat require consultation with the USFWS.				
2006	LR:1.5	X	X	X		In accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, all lands within GSENM will continue to be withdrawn from mineral entry.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
2007	LR:1.1				X	No similar action.	Manage land becoming unencumbered by withdrawals in a manner consistent with adjacent or comparable public land within the Planning Area.			
2008	LR:1.6				X	Consider land exchanges and acquisitions so long as the current owner is a willing participant and so long as the action is in the public interest, and is in accordance with other management goals and objectives of this plan. The action must also result in a net gain of objects and values within GSENM, such as wildlife habitat, cultural sites, riparian areas, live water, threatened or endangered species habitat, or areas key to the maintenance of productive ecosystems. The action may also meet one or more of the following criteria: • Ensures the accessibility of public lands in areas where access is needed and cannot otherwise be obtained; • Is essential to allow effective management of public lands; and • Results in the acquisition of lands that serve a National priority as identified in National policy directives. All land exchanges and acquisitions will be subject to valid existing rights as determined by the BLM.	To be considered for any form of land tenure adjustment (including but not limited to exchanges, Recreation and Public Purposes Act, acquisitions, etc. [except FLPMA 203 Sales]), public lands in the Planning Area must meet one or more of the following land tenure criteria. The adjustment: 1. Is in the public interest and accommodates needs of State, local, or private entities, including needs for the economy, community growth, and expansion, and is in accordance with other land use goals, objectives, and RMP planning decisions; 2. Results in a net gain of important and manageable resource values on public lands, such as crucial wildlife habitat, cultural sites, high-value recreation areas, high-quality riparian areas, live water, threatened and endangered species habitat, or areas key to maintaining productive ecosystems; 3. Ensures accessibility of public lands in areas where access is needed and cannot otherwise be obtained; 4. Is essential to allow effective management of public lands in areas where consolidation of ownership is necessary to meet resource management objectives; and 5. Results in acquisition of lands that serve a national priority as identified in national policy directives. All future land tenure adjustments will require a site-specific environmental analysis in accordance with NEPA when an actual land tenure adjustment action is proposed. All future land tenure adjustments must be in conformance with other goals and objectives in this plan, some of which could preclude land tenure adjustment. All land tenure adjustments will be subject to valid existing rights as determined by the authorized officer. Acquisitions will be managed in a manner consistent with adjacent or comparable public land within the Planning Area. When evaluating whether acquisition or exchange of a particular parcel is appropriate, the increase or decrease of public access for outdoor recreation—including hunting and fishing—will be considered in accordance with Secretarial Order 3373 or current directives.			
2009	LR:1.1				X	No similar action.	To reduce potential resource conflicts, manage Recreation and Public Purposes Act land tenure adjustments subject to No Surface Occupancy stipulations for mineral leasing to ensure protection of the Recreation and Public Purpose Act leaseholder's improvements on the leased area. If these sites are no longer required, the lease would be relinquished or terminated, and they would be managed consistent with adjacent lands.			
2010	LR:1.6	X	X	X	X	Approve filming in all zones if the activity complies with the zone requirements and plan provisions. Permits for commercial filming will be required and the preparation of a project-level NEPA document (BLM Manual 2920) may be required.	Permits for commercial filming will be required. Authorize filming throughout the decision area after site-specific review is completed.			

Lands and Realty (LR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE				
						Management of ROWs and ROW Corridors				
2011	LR:1.5	X	X	X	X	Prohibit utility ROWs in the Primitive Zone. In cases of extreme need for local (not regional) needs and where other alternatives are not available, a plan amendment could be considered for these facilities in the Primitive Zone. Communication sites will only be allowed in the Primitive Zone for safety purposes and where no other alternative exists. Allow communication sites and utility ROWs in the Outback Zone within the constraints of the zone, where no other reasonable location exists, and will meet the visual objectives (see the Visual Resources, Night Skies, and Natural Soundscapes section for related decisions) (Map 35).	• Manage 1,769,144 acres as ROW exclusion areas (including communication sites) (Map 36). • Manage 97,102 acres as ROW avoidance areas (including communication sites) (Map 36). (Note: Any portions of GSENM not managed as ROW avoidance are ROW exclusion). No open lands.	• Manage 1,087,338 acres as ROW exclusion areas (including communication sites) (Map 37). • Manage 533,383 acres as ROW avoidance areas (including communication sites) (Map 37). • Manage 245,525 acres as ROW open areas (including communication sites) (Map 37).	• Manage 883,808 acres as ROW exclusion areas (including communication sites) (Map 38). • Manage 330,887 acres as ROW avoidance areas (including communication sites) (Map 38). • Manage 651,550 acres as ROW open areas (including communication sites) (Map 38).	• Manage 881,280 acres as ROW exclusion areas (including communication sites) (Map 39). • Manage 354,084 acres as ROW avoidance areas (including communication sites) (Map 39). • Manage 630,881 acres as ROW open areas (including communication sites) (Map 39).
2012	LR:1.1 LR:1.5	X	X	X	X	Follow existing BLM guidance on communication site placement.	Require all new communication facilities be located in existing communication sites. New ROWs at existing communication sites must be in compliance with an existing communication site plan.	Require new communication facilities be located in existing communication sites, unless it is demonstrated that the placement of new facilities in an existing site is not feasible.	Authorize communication site facilities in areas open to new ROWs.	Authorize communication site facilities in areas open to new ROWs.
						Withdrawals				
2013	LR:1.5				X	In accordance with Presidential Proclamation 9682, lands within KEPA are no longer withdrawn from mineral entry (Map 40).	Recommend withdrawing approximately 506,995 acres of Federal mineral estate from mineral entry within KEPA (Map 41).	Recommend withdrawing approximately 213,705 acres of Federal mineral estate from mineral entry within KEPA (Map 42).	Recommend withdrawing 0 acres of Federal mineral estate from mineral entry within KEPA (Map 43).	Recommend withdrawing 0 acres of Federal mineral estate from mineral entry within KEPA (Map 43).

2.3.11.2 Renewable Energy

Renewable Energy (RE)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal RE:1 Manage and provide opportunities for solar, wind, geothermal, and other renewable energy uses in consideration of goals, objectives, and management of other resources. **Objectives:** **RE:1.1** Identify renewable energy variance, avoidance, and exclusion areas. **RE:1.2** Provide opportunities for renewable energy development where compatible with other resources.				
						MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES				
2014	RE:1.1	X	X	X	X	ROW avoidance and exclusion areas also apply to renewable energy development.				
2015	RE:1.1	X	X	X		Prohibit (i.e., exclude) utility-scale renewable energy development in GSENM.				
						MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE				
2016	RE:1.1				X	No similar action (Map 44).	• In KEPA, manage 839,216 acres as utility-scale wind energy exclusion areas (Map 45). • In KEPA, manage 23,215 acres as available for potential utility-scale wind energy development (Map 45).	• In KEPA, manage 715,190 acres as utility-scale wind energy exclusion areas (Map 46). • In KEPA, manage 147,241 acres as available for potential utility-scale wind energy development (Map 46).	• In KEPA, manage 220,980 acres as utility-scale wind energy exclusion areas (Map 47). • In KEPA, manage 641,451 acres as available for potential utility-scale wind energy development (Map 47).	• In KEPA, manage 229,960 acres as utility-scale wind energy exclusion areas (Map 48). • In KEPA, manage 632,471 acres as available for potential utility-scale wind energy development (Map 48).

Renewable Energy (RE)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
2017	RE:1.1				X	Not available (i.e., excluded) for solar development (Map 49).[2]	• In KEPA, manage 862,431 acres as utility-scale solar energy exclusion areas (Map 50). • In KEPA, manage 0 acres as utility-scale solar energy variance areas (Map 50). • Do not designate any solar energy zones (designated leasing areas) for utility-scale solar energy development.	• In KEPA, manage 862,431 acres as utility-scale solar energy exclusion areas (Map 51). • In KEPA, manage 0 acres as utility-scale solar energy variance areas (Map 51). • Do not designate any solar energy zones (designated leasing areas) for utility-scale solar energy development.	• In KEPA, manage 859,959 acres as utility-scale solar energy exclusion areas (Map 52). • In KEPA, manage 2,472 acres as utility-scale solar energy variance areas (Map 52). • Do not designate any solar energy zones (designated leasing areas) for utility-scale solar energy development.	• In KEPA, manage 859,959 acres as utility-scale solar energy exclusion areas (Map 53). • In KEPA, manage 2,472 acres as utility-scale solar energy variance areas (Map 53). • Do not designate any solar energy zones (designated leasing areas) for utility-scale solar energy development.

2.3.12 Livestock Grazing

Livestock Grazing (LG)									
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal LG:1 Maintain, restore, or enhance rangeland health and provide for appropriate livestock grazing opportunities. **Objectives:** **LG:1.1** Maintain, restore, or enhance sustainable rangeland ecosystems to meet BLM Utah's Standards for Rangeland Health and to produce a wide range of public values such as wildlife habitat, livestock forage, recreation opportunities, clean water, sustainable economic benefits to local communities, and functional watersheds. **LG:1.2** Integrate livestock use and associated management practices with other multiple-use needs and objectives to maintain, protect, and improve rangeland health while reducing conflicts. **LG:1.3** Reduce or eliminate livestock-related rangeland resource problems on all allotments not meeting rangeland health standards while maintaining livestock forage in the long term. **LG:1.4** Design grazing systems and range improvements to achieve and maintain healthy rangelands. **Goal LG:2** NPS/Glen Canyon Goals and Objectives: Manage livestock grazing while maintaining healthy ecosystems and protecting biological and cultural resources and the values and purposes of Glen Canyon.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
2018	LG:1	X	X	X		Grazing permits or leases convey no right, title, or interest in the land or resources used. Although Presidential Proclamation 6920 specifically mentions livestock grazing, it does not establish it as a "right" or convey it any new status. Presidential Proclamation 6920 states that "grazing shall continue to be governed by applicable laws and regulations other than this proclamation," and says that Presidential Proclamation 6920 is not to affect existing permits for, or levels of, livestock grazing within GSENM. Other applicable laws and regulations govern changes to existing grazing permits and levels of livestock grazing in GSENM, just as in other BLM livestock grazing administration programs.	The monument designation does not affect authorizations for livestock grazing or administration of those authorizations on lands in the monument. Livestock grazing within the monument is governed by laws and regulations other than the Presidential Proclamations.			
2019	LG:1.1 LG:1.2 LG:1.3				X	No similar action.	Suspend authorization of AUMs in areas of intensive surface disturbance (e.g., oil and gas, surface mining, civil works) unless or until rehabilitation is either ongoing or complete.			
2020	LR:1.2	X	X	X	X	No similar action.	Any proposal to change the kind/type of livestock to domestic sheep/goats would be considered per BLM Manual 1730 (or most recent guidance). A site-specific analysis of any proposal would be conducted to identify the level of risk to the health of wild sheep and determine whether the action can occur and still achieve effective separation between domestic sheep/goats and wild sheep.			

[2] The ROD for the Solar Programmatic EIS (BLM 2012h) amended the 2000 GSENM MMP to identify 8 acres of variance area. The variance area is likely due to a mapping error because the Programmatic EIS identified the lands contained in the Planning Area as not available for/excluded from utility-scale solar development. For the purposes of current management, the entire area is identified as not available/excluded.

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
						Allocations				
2021	LG:1.5	X	X	X	X	Allocate 2,053,761 acres as available for livestock grazing (Maps 54 and 55). Allocate AUMs as follows: • Active—76,957 • Suspended—29,245 • Maximum permitted—106,202 GSENM: 941,007 acres Glen Canyon: 228,505 acres KEPA: 831,566 acres KFO: 50,222 acres ASFO: 2,317 acres Of this total, 14,603 acres are allocated as reserve common allotments in GSENM.	Allocate 1,604,094 acres as available for livestock grazing (Maps 54 and 56). Allocate AUMs as follows: • Active—63,144 • Suspended—29,245 • Maximum permitted—92,389 GSENM: 714,408 acres Glen Canyon: 168,567 acres KEPA: 675,684 acres KFO: 43,119 acres ASFO: 2,317 acres Zero acres are allocated to reserve common allotments but are not available for grazing.	Allocate 2,062,435 acres as available for livestock grazing (Maps 54 and 57). Allocate AUMs as follows: • Active—76,413 • Suspended—29,245 • Maximum permitted—105,765 GSENM: 942,179 acres Glen Canyon: 223,510 acres KEPA: 844,200 acres KFO: 50,229 acres ASFO: 2,317 acres Of this total, 19,530 acres are reserve common allotments in GSENM.	Allocate 2,136,602 acres as available for livestock grazing (Maps 54 and 58). Allocate AUMs as follows: • Active—107,995 • Suspended—0 • Maximum permitted—107,995 GSENM: 991,874 acres Glen Canyon: 228,505 acres KEPA: 848,424 acres KFO: 65,483 acres ASFO: 2,317 acres Zero acres are allocated to reserve common allotments. When active AUMs reach 95% of permitted AUMs (i.e., when active AUMs reach 102,595), reevaluate whether the maximum permitted AUMs may be increased above 107,995 AUMs. Increasing maximum permitted AUMs would require a plan amendment and associated NEPA analysis. Suspended AUMs would only become authorized if carrying capacity supports an AUM increase.	Allocate 2,136,602 acres as available for livestock grazing (Maps 54 and 58). Allocate AUMs as follows: • Active—107,995 • Suspended—0 • Maximum permitted—107,995 GSENM: 991,874 acres Glen Canyon: 228,505 acres KEPA: 848,424 acres KFO: 65,483 acres ASFO: 2,317 acres 1,800 acres are allocated to reserve common allotments that could also be used for scientific study and research. When active AUMs reach 95% of permitted AUMs (i.e., when active AUMs reach 102,595), reevaluate whether the maximum permitted AUMs may be increased above 107,995 AUMs. Increasing permitted AUMs above 107,995 AUMs would require a plan amendment and associated NEPA analysis. Increasing maximum permitted AUMs would require a plan amendment and associated NEPA analysis.
2022	LG:1.1 LG:1.2 LG:1.3 LG:1.4 LG:1.5	X	X	X	X	Allocate 137,339 acres as unavailable for livestock grazing (Maps 54 and 55) and cancel grazing permits, including the following areas: • Big Bowns Bench (River pasture; Escalante MFP Amendment, p. 3) • Deer Creek (Cottonwood and River pastures; Escalante MFP Amendment, p. 3) • Dry Hollow (Escalante MFP, Table 1) • Escalante River (Escalante MFP Amendment, p. 4) • Harvey's Fear (Paria MFP RM-1.2) • Long Neck (Escalante MFP, Table 1) • McGath Point (Escalante MFP Amendment, p. 4) • Muley Twist (Escalante MFP, Table 1) • Navajo Bench (Paria MFP RM-1.2) • Phipps (River pastures; Escalante MFP Amendment, p. 3) • Rattlesnake Bench (Escalante MFP, Table 1) • Rock Creek-Mudholes (Dry Rock Creek and Middle Rock Creek pastures; Escalante MFP, Table 1) • Saltwater Creek (Escalante MFP Amendment, p. 4)	Allocate 607,226 acres as unavailable for livestock grazing (Maps 54 and 56) and cancel grazing permits, including the following areas: • Alvey Wash Allotment • Antone Flat Allotment • Big Bowns Bench Allotment • Big Horn Allotment (Big Flat North pasture) • Circle Cliffs Allotment (Gulch and Lampstand pastures) • Cottonwood Allotment (Gravelly Hills and Paria River pastures) • Deer Creek Allotment • Dry Hollow Allotment • Dry Valley Allotment (Hackberry Canyon) • Escalante River Allotment • Flag Point Allotment • Flood Canyon Allotment • Fortymile Ridge Allotment (East pasture) • Harvey's Fear Allotment • King Bench Allotment (King Bench pasture) • Lake Allotment (Navajo Point pasture) • Last Chance Allotment (Summer pasture) • Little Bowns Bench Allotment	Allocate 164,435 acres as unavailable for livestock grazing (Maps 54 and 57) and cancel grazing permits, including the following areas: • Antone Flat Allotment • Big Bowns Bench Allotment (River pasture) • Deer Creek Allotment (Cottonwood and River pastures) • Escalante River Allotment • Harvey's Fear Allotment • Lake Allotment (Navajo Point pasture) • Little Desert RMZ Allotment • Long Neck Allotment • McGath Point Allotment • Muley Twist Allotment • Navajo Bench Allotment • No Mans Mesa RNA • Phipps Allotment (River pastures) • Rattlesnake Bench Allotment • Rock Creek-Mudholes Allotment (Dry Rock Creek and Middle Rock Creek pastures) • Saltwater Creek Allotment • Spencer Bench Allotment • Steep Creek Allotment	Allocate 105,519 acres as unavailable for livestock grazing (Map 54 and Map 58) and maintain closures or cancel grazing permits, including the following areas: • Big Bowns Bench (River Pasture in Glen Canyon NRA) • Escalante River Allotment (in Glen Canyon NRA) (Map 59) • Harvey's Fear Allotment • Muley Twist Allotment • Navajo Bench Allotment • No Mans Mesa RNA • Rattlesnake Bench Allotment • Rock Creek-Mudholes Allotment (Dry Rock Creek and Middle Rock Creek pastures) • Spencer Bench Allotment • Unallotted areas in Glen Canyon • Willow Gulch Allotment (Lower Calf Creek Falls pasture) In areas that would be unavailable for livestock grazing, livestock could be used to achieve resource objectives such as fuel reductions and/or weed control.	Allocate 105,519 acres as unavailable for livestock grazing (Map 54 and Map 58) and maintain closures or cancel grazing permits, including the following areas: • Big Bowns Bench (River Pasture in Glen Canyon NRA) • Escalante River Allotment (in Glen Canyon NRA) (Map 59) • Harvey's Fear Allotment • Muley Twist Allotment • Navajo Bench Allotment • No Mans Mesa RNA • Rattlesnake Bench Allotment • Rock Creek-Mudholes (Dry Rock Creek and Middle Rock Creek pastures) Allotment • Spencer Bench Allotment • Unallotted areas in Glen Canyon • Willow Gulch Allotment (Lower Calf Creek Falls pasture) In areas that would be unavailable for livestock grazing, livestock could be used to achieve resource objectives such as fuel reductions and/or weed control.

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						• Spencer Bench (Paria MFP RM-1.2) • Steep Creek (Escalante MFP Amendment, p. 4) • Willow Gulch (Lower Calf Creek Falls pasture)	• Long Neck Allotment • Lower Hackberry Allotment • Lower Warm Creek Allotment • Main Canyon Allotment • McGath Point Allotment • Mollies Nipple Allotment (portion of Buckskin pasture; Blue Springs and Jenny Clay Hole pastures) • Muley Twist Allotment • Navajo Bench Allotment • No Mans Mesa RNA • Phipps Allotment • Rattlesnake Bench Allotment • Rock Creek-Mudholes Allotment • Round Valley Allotment • Saltwater Creek Allotment • Spencer Bench Allotment • Steep Creek Allotment • Unallotted areas in Glen Canyon • Upper Cattle Allotment (Cedar Wash pasture) • Upper Hackberry Allotment (South Jody pasture and Upper Hackberry Canyon) • Upper Paria Allotment (Henderson Canyon, Lower Coal Bench, Upper Coal Bench, and Willis Creek pastures, and unallotted areas) • Vermilion Allotment (Seaman pasture) • Willow Gulch Allotment (Lower Cal Creek Falls pasture)	• Unallotted areas in Glen Canyon • Willow Gulch Allotment (Lower Calf Creek Falls pasture) In areas that would be unavailable for livestock grazing, livestock could be used to achieve resource objectives such as fuel reductions and/or weed control.		
2023	LG:1.1 LG:1.2 LG:1.3 LG:1.4 LG:1.5	X	X	X	X	Continue the unallotted status on the following allotments by not allocating livestock forage in these areas: • Antone Flat; continue to allow trailing (Escalante MFP RM-2.8) • Upper Paria (South pasture) • Flag Point (Vermilion MFP Table 1) • Unallotted areas in Glen Canyon • Varney Griffin	No similar action; the allotments are unavailable for livestock grazing.	No similar action; the allotments are identified as either available or unavailable for livestock grazing. For allotments that are available for livestock grazing, during the permit renewal process, conduct additional assessments to determine whether AUMs are available.	Manage the previously unallotted Antone Flat, Upper Paria (South pasture), and Varney Griffin allotments as available for livestock grazing. Conduct assessments to determine available AUMs.	Manage the previously unallotted Antone Flat, Upper Paria (South pasture), and Varney Griffin allotments as available for livestock grazing. Conduct assessments to determine available AUMs.

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
2024	LG:1.2 LG:1.5	X	X	X	X	Manage a reserve common allotment with the remaining AUMs on Phipps allotment and all available forage on Little Bowns Bench allotment, and the Wolverine pasture (148 AUMs) of the Deer Creek allotment. This grass bank would only be used during emergencies or for research purposes. Emergencies would include, but would not be limited to, drought, insect outbreaks, fire, or floods. Any emergency use would not exceed current authorized use and could occur from October 1 to March 31 (Escalante MFP Amendment, p. 4).	No similar action; the allotments or pastures are unavailable for livestock grazing, and no reserve common allotments would be established.	Maintain reserve common allotments in the Little Bowns Bench, Deer Creek (Wolverine pasture), and Phipps (Phipps pasture) allotments. In Glen Canyon, manage Big Bowns Bench (Middle and Seep Side pastures) as reserve common allotments. Only permittees and lessees that hold permits in the Planning Area would be authorized to use reserve common allotments.	No similar action; the allotments or pastures are available for livestock grazing. The allotments or pastures are available as individual allotments or could be combined with other allotments based on the needs of the permittee and management for that allotment.	Manage the Upper River portion of the Phipps Allotment as a reserve common allotment that could also be used for scientific study and research. The allotments or pastures are available as individual allotments or could be combined with other allotments based on the needs of the permittee and management for that allotment.
2025	LG:1.2 LG:1.5					No similar action; the southern portion of the Grand Bench pasture (Rock Creek-Mudholes allotment) is available for livestock grazing.	No similar action; the southern portion of the Grand Bench pasture (Rock Creek-Mudholes allotment) is unavailable for livestock grazing.	No similar action; the southern portion of the Grand Bench pasture (Rock Creek-Mudholes allotment) is a reserve common allotment.	In Glen Canyon, use the southern portion of the Grand Bench pasture (Rock Creek-Mudholes allotment) as an experimental pasture.	In Glen Canyon, use the southern portion of the Grand Bench pasture (Rock Creek-Mudholes allotment) as an experimental pasture for scientific study and research.
2026	LG:1.1 LG:1.2 LG:1.3 LG:1.4 LG:1.5	X	X	X	X	Allow the use of reserve common allotments on a nonrenewable basis under 43 CFR 4130.6-2 for a variety of reasons including, but not limited to: • To facilitate research in grazing methods in GSENM • While pastures and allotments are rested, such as: – After an emergency – After vegetation treatments (including fuels reduction) – To make progress toward meeting BLM Utah Rangeland Health Standards – To remove decadent vegetation – Occasional use to help maintain range improvements	No similar action; there are no reserve common allotments.	Use reserve common allotments on a nonrenewable basis under 43 CFR 4130.6-2 for a variety of reasons, including, but not limited to: • Facilitate research in grazing methods in GSENM/KEPA • Offset potential temporary reductions in existing allotments, such as: – After an emergency – After vegetation treatments – To make progress toward meeting BLM Utah Rangeland Health Standards. – To achieve resource objectives such as fuel reductions and/or weed control.	Same as Alternative B.	Manage the Upper River portion of the Phipps Allotment as a reserve common allotment that could also be used for scientific study and research.
2027	LG:1.1 LG:1.2 LG:1.3 LG:1.4 LG:1.5	X	X	X	X	Comply with BLM policy for voluntary relinquishment (currently Instruction Memorandum No. 2013-184; see Diagram 2-1, Voluntary Relinquishment Decision Tree). The authorized officer may take one or more of the following actions: • Issue a grazing permit to a different applicant. • Stock with livestock from another allotment with unmet resource objectives. • Combine with an adjacent allotment that has unmet resource objectives. • Consider use of the allotment as a reserve common allotment (i.e., continue livestock grazing but do not recognize an individual with preference to the forage). • Amend or revise the land use plan to allocate forage to uses other than livestock grazing. In other words, the land use plan would be amended or revised to allocate	In GSENM/KEPA and Glen Canyon, upon receiving any request for voluntary relinquishment of permitted livestock grazing, the authorized officer would re-evaluate whether livestock grazing is in the best interest of achieving management plan goals and consider amending the MMP to allocate forage for a different purpose pursuant to Instruction Memorandum No. 2013-184 (or most recent policy); see Figure 2-1, Voluntary Relinquishment Decision Tree. When voluntarily relinquished or otherwise retired, consider and publicly analyze for classification as unavailable grazing preference in GSENM/KEPA or Glen Canyon allotments or pastures containing any of the following or combinations of the following: • Areas that would serve as valuable reference areas • Vegetation types that are either not represented or are underrepresented in the Decision Area that are ungrazed	Same as Alternative A.	Same as Alternative A, except preference would be for any of the following or combinations of the following: • Issue a grazing permit to a different applicant. • Stock with livestock from another allotment with unmet resource objectives. • Combine with an adjacent allotment that has unmet resource objectives. • In Glen Canyon: consider measures consistent with the protection of Glen Canyon resources, values, and purposes.	Comply with BLM policy for voluntary relinquishment (currently Instruction Memorandum No. 2013-184; see Diagram 2-1, Voluntary Relinquishment Decision Tree). The authorized officer may take one or more of the following actions: • Issue a grazing permit to a different applicant. • Stock with livestock from another allotment with unmet resource objectives. • Combine with an adjacent allotment that has unmet resource objectives. • Consider use of the allotment as a reserve common allotment (i.e., continue livestock grazing but do not recognize an individual with preference to the forage). • Amend or revise the land use plan to allocate forage to uses other than livestock grazing. In other words, the land use plan would be amended or revised to allocate the

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						the allotment as unavailable for livestock grazing.	• Monument objects or Glen Canyon Values and purposes that are not compatible with or are affected by livestock grazing (e.g., biological soil crust, riparian areas, and declining native plant or wildlife species) • Significant cultural sites such as districts, sites, buildings, structures, and objects • Important opportunities to conserve or restore historical, cultural, soil health, biological soil crust, fish, wildlife, riparian, vegetation, and/or water quality objectives of the MMP • Riparian areas, springs, and hanging gardens that have or are currently affected by livestock grazing • Recreation values that are compromised by livestock grazing • Populations or occupied habitat for threatened or endangered species; candidate or proposed threatened or endangered species; and special status species, or their habitat (e.g., Southwestern willow flycatcher, sage grouse, desert bighorn sheep, and Mexican spotted owl)			allotment as unavailable for livestock grazing. • In Glen Canyon: consider measures consistent with the protection of Glen Canyon resources, values, and purposes. Preference would be for one of the following: • Issue a grazing permit to a different applicant. • Stock with livestock from another allotment with unmet resource objectives. • Combine with an adjacent allotment that has unmet resource objectives. • In Glen Canyon: consider measures consistent with the protection of Glen Canyon resources, values, and purposes.
						Grazing Management Practices				
2028	LG:1.4	X	X	X	X	As allotments are evaluated through monitoring studies, adjust the season of use to fit current conditions and operator needs consistent with other resource objectives.	In GSENM/KEPA and Glen Canyon, adaptively manage season of use, duration, distribution, and stocking rate (AUMs) of livestock grazing to ensure that goals and objectives are met. Additional requirements, such as an indicator for biological soil crust, are also described in this alternative. To ensure that BLM Utah Rangeland Health Standards are met, use range improvements, salting, supplements, or other techniques, except where prohibited in Glen Canyon. In GSENM/KEPA and Glen Canyon, alter the season of use, duration, and recovery periods based on monitoring data.	In GSENM/KEPA and Glen Canyon, adaptively manage season of use, duration, distribution, and stocking rate (AUMs) of livestock grazing to meet or move toward meeting BLM Utah Rangeland Health Standards. To ensure that land health standards are met, use range improvements, salting, supplements, or other techniques, except where prohibited in Glen Canyon. In GSENM/KEPA and Glen Canyon, alter the season of use, duration, and recovery periods based on monitoring data.	In GSENM/KEPA and Glen Canyon, adaptively manage season of use, duration, and distribution of livestock grazing to meet or move toward meeting BLM Utah Rangeland Health Standards, before considering changes to stocking rate (AUMs). Actions to improve land health include, but are not limited to: • Maintain existing developments (structural and nonstructural improvements). • Install new developments (e.g., water developments and fences). • Implement nonstructural range improvements (e.g., restore shrub lands, control juniper, and control or eradicate invasive species). • Improve livestock distribution through range improvements, salting, supplements, or other techniques. In GSENM/KEPA and Glen Canyon, during the permit renewal NEPA process, analyze adjustment of the season of use, duration, and recovery periods based on monitoring data. Where appropriate, provide flexibility in grazing dates, managing for conditions rather than calendar year.	In GSENM/KEPA and Glen Canyon, adaptively manage season of use, duration, and distribution of livestock grazing to meet or move toward meeting BLM Utah Rangeland Health Standards, before considering changes to stocking rate (AUMs). Actions to improve land health include, but are not limited to: • Maintain existing developments (structural and nonstructural improvements). • Install new developments (e.g., water developments and fences). • Implement nonstructural range improvements (e.g., restore shrub lands, control juniper, and control or eradicate invasive species). • Improve livestock distribution through range improvements, salting, supplements, or other techniques. In GSENM/KEPA and Glen Canyon, during the permit renewal NEPA process, analyze adjustment of the season of use, duration, and recovery periods based on monitoring data. Where appropriate, provide flexibility in grazing dates, managing for conditions rather than calendar year.
2029	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action.	Use lands identified as unavailable for livestock grazing to compare grazed areas to ungrazed areas to measure progress toward	In GSENM/KEPA and Glen Canyon where local reference areas are preferable but do not exist, designate reference areas. Depending on the purpose, reference areas can be of various	If ungrazed reference areas are established, do not exceed 0.5% in any allotment or 0.5% within GSENM; size in Glen Canyon will be determined based on best available science.	If ungrazed reference areas are established, do not exceed 0.5% or 80 acres, whichever is less, in any allotment or 0.5% within GSENM; size in Glen Canyon will be determined based on best

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							meeting or achieving objectives for native plant communities, riparian and areas, and soils. Grazed areas should be exceeding or moving toward 80% of desirable condition in comparable ungrazed areas. In GSENM/KEPA and Glen Canyon, reference areas exist or are established in order to demonstrate potential for objectives to be met, and/or potential rate of change toward meeting objectives. Reference areas are established across the Decision Area that represent the range of ecosystem and plant community types (both riparian and upland), including sites that have received exotic vegetation treatments. A reference area, with the exception of recovery reference areas (see below), consists of a site that has not been grazed or accessible to livestock for at least 10 years. • Where local reference areas are preferable but do not exist, designate local areas to attain future reference area status (i.e., at least 10 years of non-use by livestock). In the interim, use a more distant reference site that has not been grazed for at least 10 years. • Prioritize establishment of larger, landscape-scale reference areas whenever feasible in order to allow for recovery and/or protection of ecosystem functions, a patchwork of habitats, species diversity, and other elements not easily documented within small reference areas. • Establish and maintain at least two permanent range cages (at least 16 feet by 16 feet) in each grazed pasture, in representative areas frequently used by livestock. • Recovery reference areas are areas where livestock grazing has ceased, but that have not been ungrazed for 10 years. Exclosures of various sizes can immediately begin to provide for comparison with sites on which livestock are being adaptively or experimentally managed for recovery toward particular objectives. Recovery on the grazed sites (particularly for such physical features as ground cover, sheet erosion, and stream bank protection; or for seed head production) can be compared with the recently ungrazed sites for comparative rates and types of recovery. In GSENM/KEPA and Glen Canyon, objectives generally will be considered to have been met when monitoring documents the indicators are at least 80% (e.g., soil cover, willow density,	sizes and would occur in a variety of ecosystem and plant community types (both upland and riparian). Use reference areas in the Colorado Plateau ecoregion in Capitol Reef National Park, Bryce Canyon National Park, etc. to compare grazed areas to ungrazed areas to measure progress toward meeting BLM Utah Rangeland Health Standards. All reference areas, even offsite reference areas, can be of various sizes in a variety of ecosystem and plant community types (both upland and riparian). The purpose of establishing ungrazed reference areas is to establish a control in order to confirm the factor(s) for not meeting land health standards and distinguish the impacts of climate change from livestock grazing impacts. They also serve to measure the degree to which an area is not meeting, moving toward, or meeting BLM Utah Rangeland Health Standards.	Allotments or pastures identified as unavailable for livestock grazing do not count toward the 0.5% cap within the monument.	available science. Allotments or pastures identified as unavailable for livestock grazing may not count toward the 0.5% cap within the monument.

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							native plant species richness) of those in reference areas of the same ecological site (e.g., soil type, precipitation, elevation, slope). Such reference areas may consist of exclosures, ungrazed pastures/allotments, permanent range cages, or ungrazed recovery reference areas. Conditions below 80% of the reference site(s) are appropriate subjects for problem-solving among the BLM, NPS, permittees, and interested public. Monitor currently ungrazed reference areas for conditions and changes absent livestock grazing. Monitor newly established reference areas (i.e., recovery reference areas where grazing is discontinued) to see how they move toward a reference state. Monitor both grazed and ungrazed areas to differentiate climate impacts from livestock grazing impacts.			
2030	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action.	Each annual use plan will use the best scientific and professional judgment of the BLM and the NPS, as relevant, as to number of authorized days and/or other instructions that will result in meeting or moving toward objectives. Outcomes will inform the next year's annual use plan.	No similar action.	No similar action.	No similar action.
2031	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action.	In GSENM/KEPA and Glen Canyon, when grazing occurs during the growing season, there will be a minimum 6-week deferment between the date when grazing use begins one year and the date when grazing use begins the following year (for example, Year 1, grazing during the growing season starts on March 1; Year 2, grazing during the growing season starts April 15). Avoid grazing an area at the same time every year. If this is not possible in a particular area, the area will be rested every other year (for example, Year 1, grazing during the growing season; Year 2, rest; Year 3, graze during the growing season).	No similar action.	No similar action.	No similar action.
2032	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action; the BLM follows direction provided at 43 CFR 4180.	Allotment Action Plans. In addition to requirements in 43 CFR 4180 to initiate change in order to meet or make progress toward meeting BLM Utah Rangeland Health Standards, when monitoring of indicators shows a GSENM/KEPA or Glen Canyon allotment or pasture is failing to meet or move toward objectives, action plans will be drawn up for meeting or moving toward objectives. Unless explicitly experimental, with appropriate controls and monitoring of outcomes assured, action plans must be based on evidence that the proposed activities or management have resulted in movement toward the particular objectives in other settings and must include methods for measuring whether conditions are improving under the action plan. If movement toward BLM Utah Rangeland Health Standards and objectives is not being	Same as Alternative A.	Same as Alternative A.	No similar action; the BLM follows direction provided at 43 CFR 4180.

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							observed/measured, adjustments to the action plan will be made.			
2033	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action; the BLM follows direction provided at 43 CFR 4180.	If a land health determination finds that an allotment is not meeting objectives and BLM Utah Rangeland Health Standards and livestock grazing is a contributing or causal factor, livestock grazing would be temporarily suspended. Once conditions meet objectives and BLM Utah Rangeland Health Standards, livestock grazing may resume after an evaluation is made that the contributing factors that caused the allotment to not meet objectives and BLM Utah Rangeland Health Standards have been reduced, and measures are in place to prevent the allotment from moving away from meeting objectives and BLM Utah Rangeland Health Standards.	No similar action.	Same as Alternative A.	No similar action; the BLM follows direction provided at 43 CFR 4180.
2034	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action.	Riders can be considered for permit terms and conditions as a tool for better livestock distribution.	Same as Alternative A.	No similar action.	No similar action.
2035	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action; the BLM follows the regulations at 43 CFR 4130.4.	In GSENM/KEPA and Glen Canyon, a permittee request for annual non-use or partial use will be granted for conservation or protection goals that can be objectively documented and measured. A monitoring plan, including relevant indicators, and schedule will be part of the request.	Same as Alternative A.	Same as Alternative A.	No similar action; the BLM follows the regulations at 43 CFR 4130.4.
2036	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	GSENM: The need for and extent of range improvements is considered on a case-by-case basis and identified during permit renewal in conformance with the MMP.	GSENM/KEPA: The need for and extent of range improvements is considered on a case-by-case basis and in conformance with the RMPs and with the objectives and actions in this alternative.	GSENM/KEPA: The need for and extent of range improvements is considered on a case-by-case basis and in conformance with the RMPs and with the objectives and actions in this alternative.	GSENM/KEPA: The need for and extent of range improvements is considered on a case-by-case basis and in conformance with the RMPs and with the objectives and actions in this alternative. Best practices include cutting of juniper posts or stays by permittees for the improvement or maintenance of structural range improvements (not in Glen Canyon).	GSENM/KEPA: The need for and extent of range improvements is considered on a case-by-case basis and in conformance with the RMPs and with the objectives and actions in this alternative. Best practices include cutting of juniper posts or stays by permittees for the improvement or maintenance of structural range improvements (not in Glen Canyon).
2037	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	Follow BLM regulations at 43 CFR 4180, AIM, and other approved monitoring methods.	Monitoring. Within 1 year of the ROD, the BLM and NPS (when relevant based on the interagency agreement) will determine, with interested public/permittee input, the methods the BLM will use to monitor indicators that objectives are being met. BLM monitoring will measure: • Meeting or moving toward objectives • Effectiveness of treatments at reaching both project-desired outcomes and monument-wide or Glen Canyon-wide objectives Methods include: • Existing long-term trend transects within GSENM/KEPA and Glen Canyon • Interpreting Indicators of Rangeland Health points or transects	GSENM/KEPA: Same as Alternative A. Glen Canyon: Same as Alternative B.	Continue to use existing monitoring techniques and implement others as new methods arise. Monitoring will focus on land health (Same as Alternative A).	Continue to use existing monitoring techniques and implement others as new methods arise. Monitoring will focus on land health.

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							• Proper Functioning Condition assessment points or stream reaches • AIM points • Long-term monitoring plots in Glen Canyon • Any other methods used systematically by the BLM within GSENM/KEPA or Glen Canyon			
2038	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	Follow BLM regulations at 43 CFR Part 4100, CEQ guidance for monitoring, BLM guidance for monitoring, and NPS 2006 Management Policies.	Independent Monitoring. Upon objective documentation of on-ground indications that objectives are not being met, any member of the public can arrange for a meeting with BLM or NPS staff to discuss and propose solutions to the problem(s). A written record of evidence of the problem(s), solutions considered, and commitments by the BLM, interested public, and/or permittees will be retained in the file(s) of the relevant allotment(s). Objective, repeatable data gathered independently (e.g., use of BLM monitoring methods or methods in Appendix 9 of the 2012 *Final Report and Consensus Recommendations of the Collaborative Group on Sustainable Grazing for National Forests in Southern Utah*) are required in problem-solving meetings. All such meetings are open to the permittees and other interested publics.	Same as Alternative A.	Same as Alternative A.	Follow BLM regulations at 43 CFR Part 4100, CEQ guidance for monitoring, BLM guidance for monitoring, and NPS 2006 Management Policies.
2039	LG:1.1 LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action.	In GSENM/KEPA and Glen Canyon, where grazing occurs during winter, use rest-rotation grazing so that areas are not grazed more than 2 out of 3 years.	No similar action.	No similar action.	No similar action.
2040	LG:1.4	X	X	X		No similar action.	In GSENM/KEPA and Glen Canyon, institute light utilization (30%), for both riparian and upland areas. Implement one pasture a year for each allotment until all pastures in each allotment have a light utilization limit. In Glen Canyon, upland areas will have 25% maximum utilization in spring. For purposes of quantitatively measuring utilization, utilization cages must have been in place for 2 years (rather than 1) in order to depict expected production.	No similar action.	No similar action.	No similar action.
2041	LG:1.4	X	X	X	X	Follow current policy (currently IM 2013-094, Resource Management During Drought).	In GSENM/KEPA and Glen Canyon, institute utilization limits of 25% within all pastures during a drought year using the Standardized Precipitation Index of the National Drought Mitigation Center.	Same as Alternative A.	Same as Alternative A.	Follow current policy (currently IM 2013-094, Resource Management During Drought).
Mitigating Conflicts Between Livestock Grazing and Other Uses										
2042	LG:1.2 LG:1.3	X	X	X	X	No similar action.	No similar action.	Change grazing management practices (e.g., changing season of use and fencing) before reducing AUMs on allotments to resolve conflicts with other uses (see Appendix G [*Best Management Practices*]).	Same as Alternative C.	Prioritize changing grazing management practices (e.g., changing season of use and fencing) before reducing AUMs on allotments to resolve conflicts with other uses (see Appendix G [*Best Management Practices*]).

Livestock Grazing (LG)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Range Treatments and Improvements (Refer to Vegetation Alternatives for Vegetation Treatment Management)										
2043	LG:1.2 LG:1.3 LG:1.4	X	X	X	X	No similar action.	Do not implement range improvements for the primary purpose of increasing forage for livestock.	Complete land treatments to maintain or provide additional AUMs needed to meet the demand for livestock forage and divide the AUMs proportionally among all operators within the affected allotments (see Appendix G, *Best Management Practices*).	Same as Alternative C.	Complete land treatments to maintain or provide additional AUMs needed to meet the demand for livestock forage and divide the AUMs proportionally among all operators within the affected allotments (see Appendix G, *Best Management Practices*).
2044	LG:1.4	X	X	X	X	Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving Rangeland Health Standards.	Same as Alternative A.	Allow creation of new nonstructural range improvements where not otherwise restricted by another designation.	Same as Alternative C.	Allow creation of new nonstructural range improvements where not otherwise restricted by another designation.

2.3.13 Minerals

Minerals (MR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						GSENM Goal MR:1 Manage Federal mineral estate consistent with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, and applicable mining laws. **Objectives:** **MR:1.1** Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, withdrew all Federal lands from mineral entry, location, leasing, or sale; therefore, no new Federal mineral leases or prospecting permits may be issued. **MR:1.2** Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, recognizes valid existing rights as pertaining to mineral entry, location, leasing, or sale.			
						KE Goal MR:2 Develop available Federal mineral estate in accordance with applicable mining laws. **Objectives:** **MR:2.1** Provide opportunities for mineral exploration, development, and reclamation under the mining and mineral leasing laws, subject to legal requirements to protect other resource values. **MR:2.2** Provide salable and free-use mineral materials to meet local demand through the issuance of permits and sale contracts. **MR:2.3** Identify lands available for mineral leasing and development.			
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
2045	MR:1.2 MR:2	X	X	X	X	Verify whether valid existing rights are present by periodically reviewing the files related to existing mining claims and leases. This will help ensure that required actions, filings, and fees are in full compliance with the law. This process, known as adjudication, will continue for the life of each valid existing right.				
2046	MR:1.1	X	X	X		The Materials Act of 1947 specifically excludes the disposal of mineral materials from national monuments. Do not renew free use permits or contracts for mineral materials authorized under this act.				
2047	MR:1.1	X	X	X		The existing Henrieville Creek Title 23 ROW within GSENM is inconsistent with the protection of monument resources. Request closure of this Title 23 ROW from the Federal Highway Administration and work with the Federal Highway Administration to find suitable replacement sources of mineral materials.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
Mineral Leasing (including Oil and Gas, Geothermal, etc.)										
2048	MR:2.1 MR:2.3				X	Closed to new mineral leasing (Map 60).[3]	Open 0 acres of Federal mineral estate to mineral leasing subject to standard lease terms and conditions (Map 61).	Open 0 acres of Federal mineral estate to mineral leasing subject to standard lease terms and conditions (Map 62).	Open 0 acres of Federal mineral estate to mineral leasing subject to standard lease terms and conditions (Map 63).	Open 0 acres of Federal mineral estate to mineral leasing subject to standard lease terms and conditions (Map 64).
2049	MR:2.1 MR:2.3				X	Closed to new mineral leasing.	Open 32,420 acres of Federal mineral estate to mineral leasing subject to moderate constraints (Map 61).	Open 374,772 acres of Federal mineral estate to mineral leasing subject to moderate constraints (Map 62).	Open 547,102 acres of Federal mineral estate to mineral leasing subject to moderate constraints (Timing Limitation Stipulations and/or Controlled Surface Use) (Map 63).	Open 529,898 acres of Federal mineral estate to mineral leasing subject to moderate constraints (Timing Limitation Stipulations and/or Controlled Surface Use) (Map 64).

[3] Under Presidential Proclamation 9682, lands within KEPA are no longer withdrawn from mineral location, entry, disposal, or leasing. For purposes of analysis, Alternative A assumes that the entire KEPA would be closed to mineral leasing because these are discretionary uses that are not allowed under the existing Approved MMP and ROD (BLM 2000).

Minerals (MR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
2050	MR:2.1 MR:2.3				X	Closed to new mineral leasing.	Open 237,945 acres of Federal mineral estate to mineral leasing subject to major constraints (Map 61).	Open 276,113 acres of Federal mineral estate to mineral leasing subject to major constraints (Map 62).	Open 104,972 acres of Federal mineral estate to mineral leasing subject to major constraints (Map 63).	Open 120,990 acres of Federal mineral estate to mineral leasing subject to major constraints (Map 64).
2051	MR:2.1 MR:2.3				X	Closed to new mineral leasing.	Close 591,531 acres of Federal mineral estate to mineral leasing (Map 61).	Close 210,891 acres of Federal mineral estate to mineral leasing (Map 62).	Close 209,699 acres of Federal mineral estate to mineral leasing (Map 63).	Close 210,885 acres of Federal mineral estate to mineral leasing (Map 64).
2052	MR:2.1 MR:2.3				X	No similar action.	Consider granting exceptions, waivers, or modifications to stipulations on oil and gas leases and other discretionary surface-disturbing activities in accordance with Appendix H (*Stipulations and Exceptions, Modifications, and Waivers*). No exception would be granted for No Surface Occupancy stipulations.	Consider granting exceptions, waivers, or modifications to stipulations on mineral leasing and other discretionary surface-disturbing activities in accordance with Appendix H (*Stipulations and Exceptions, Modifications, and Waivers*).	Same as Alternative C.	Consider granting exceptions, waivers, or modifications to stipulations on mineral leasing and other discretionary surface-disturbing activities in accordance with Appendix H (*Stipulations and Exceptions, Modifications, and Waivers*).
2053	MR:2.1 MR:2.3				X	No similar action.	Apply mineral leasing constraints to geophysical operations. Only casual use geophysical exploration is allowed on lands subject to No Surface Occupancy stipulations for mineral leasing, unless otherwise approved by the BLM.	Same as Alternative B.	Same as Alternative B.	Apply mineral leasing constraints to geophysical operations. Only casual use geophysical exploration is allowed on lands subject to No Surface Occupancy stipulations for mineral leasing, unless otherwise approved by the BLM.
						Leasable – Coal				
2054	MR:2.1 MR:2.3				X	No similar action.	Approximately 75,076 acres (Map 65) are unsuitable for surface coal mining and surface operations incident to an underground coal mine as stated in 43 CFR 3400.0-5(mm) based on the 20 criteria identified in Appendix L (*Coal Unsuitability Report*).	Same as Alternative B.	Same as Alternative B.	Approximately 75,076 acres (Map 65) are unsuitable for surface coal mining and surface operations incident to an underground coal mine as stated in 43 CFR 3400.0-5(mm) based on the 20 criteria identified in Appendix L (*Coal Unsuitability Report*).
2055	MR:2.1 MR:2.3				X	No similar action.	Additional areas could be found not unsuitable (43 CFR 3461.2-1(c)) or unsuitable for surface coal mining operations based on site-specific analysis (see Appendix L [*Coal Unsuitability Report*]).	Same as Alternative B.	Same as Alternative B.	Additional areas could be found not unsuitable (43 CFR 3461.2-1(c)) or unsuitable for surface coal mining operations based on site-specific analysis (see Appendix L [*Coal Unsuitability Report*]).
2056	MR:2.1				X	No similar action.	No similar action.	Manage areas found not unsuitable for coal mining as VRM Class IV.	Same as Alternative C.	Manage areas found not unsuitable for coal mining as VRM Class IV.
						Mineral Materials				
2057	MR:2.2 MR:2.2				X	Closed to mineral material disposals.[4]	Close mineral material disposals in 674,105 acres. Close to exclusive pits, open to community pits of 5 acres or fewer of unreclaimed area on 187,434 acres (Map 66).	Allow mineral material disposals subject to site-specific environmental analysis in 387,308 acres (Map 67). Close mineral material disposals in 153,258 acres. Close to exclusive pits, open to community pits of 5 acres or fewer of unreclaimed area on 320,972 acres (Map 67).	Allow mineral material disposals subject to site-specific environmental analysis in 635,952 acres (Map 68). Close mineral material disposals in 225,586 acres (Map 68).	Allow mineral material disposals subject to site-specific environmental analysis in 591,507 acres (Map 69). Close mineral material disposals in 213,802 acres (Map 69). Close to exclusive pits, open to community pits of 5 acres or fewer of unreclaimed area on 56,229 acres
						Locatable Minerals – *Refer to Record 2013 regarding lands that are proposed for withdrawal from locatable mineral entry*				

[4]Under Presidential Proclamation 9682, lands within KEPA are no longer withdrawn from mineral location, entry, disposal, or leasing. For purposes of analysis, Alternative A assumes that the entire KEPA would be closed to mineral materials disposal because these are discretionary uses that are not allowed under the existing Approved MMP and ROD (BLM 2000).

2.3.14 Recreation and Visitor Services

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal REC:1 Provide recreational activities in a variety of physical, social, and administrative settings, from primitive to rural (GSENM) and near-urban (KEPA), which allows visitors to have desired recreational experiences and enjoy the resulting benefits. **Objectives:** **REC:1.1** Manage SRMAs and RMZs for the distinct, primary recreation-tourism market for which they were created as described in Appendix R (*Recreation Management Areas*). **REC:1.2** Manage use through a range of tools, such as permits, allocations, designated recreation sites, etc. **Goal REC:2** Provide opportunities for visitor use and enjoyment of the area, consistent with resource capabilities, and mandated resource requirements. **Objectives:** **REC:2.1** Provide visitor education and interpretation of the recreational opportunities within the Decision Area. **REC:2.2** Maintain or improve important recreational values and sites in Federal ownership to ensure a continued diversity of recreation activities, experiences, and benefits. **REC:2.3** Provide educational interpretation of cultural and paleontological resource sites. **REC:2.4** Provide for public health and safety through mapping and information, facility development, and visitor management. **REC:2.5** Manage user conflicts between recreation and other resources and uses (e.g., livestock grazing). **REC:2.6** Manage recreational areas and project objects and resources containing significant scenic, natural, and cultural values as well as areas with scientific importance.			
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
2058	REC:2.5 REC:2.6	X	X	X	X	Do not allow horses or other pack animals in relict plant communities, areas with standing structural sites, rock shelters, or alcoves.				
2059	REC:2.5 REC:2.6	X	X	X	X	Do not allow campfires in the Escalante and Paria/Hackberry Canyons, No Mans Mesa, and other relict plant areas as they are identified. Also prohibit campfires in archaeological and historic sites, rock shelters, or alcoves.				
2060	REC:2.5	X	X	X	X	Allow camping adjacent to range facilities and isolated water sources unless otherwise posted.				
2061	REC:2.5	X	X	X	X	Create campgrounds or designated dispersed camping areas to support management goals and objectives for other resources.				
2062	REC:2.4	X	X	X	X	Develop new parking lots, restrooms, and other recreation facilities along open travel routes or other appropriate areas.				
2063	REC:1 REC:2	X	X	X	X	Limit motorized and mechanized events to areas designated for motorized and mechanized use.				
2064	REC:2.4	X	X	X	X	Require the use of disposable, self-contained human waste management systems within 300 feet of a water source.				
2065	REC:2.5	X	X	X	X	Prohibit competitive events in WSAs.				
2066	REC:1.2	X	X	X	X	Prohibit off-route parking in WSAs.				
2067	REC:2.5 REC:2.6	X	X	X	X	Where appropriate, group size limits are identified for individual SRMAs and RMZs. Where necessary, the agency may modify these decisions. For example, more restrictive group size limits may be necessary to be consistent with management of NPS units or protect opportunities for solitude or primitive and unconfined recreation in certain WSAs. Group size limits may also be adjusted to protect other resource values like riparian or wildlife resources.				
2068	REC:2.5				X	Apply a No Surface Occupancy stipulation for leasable minerals to developed recreation sites and backcountry airstrips.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
2069	REC:2.5	X	X	X	X	No similar action.	Prohibit target shooting within at least 0.25 mile of residences, campgrounds, and developed recreation facilities, or greater depending on area-specific conditions.			
2070	REC:2.5				X	No similar action.	Recommend developed recreation sites be withdrawn from mineral entry.			
2071	REC:1.2	X	X	X	X	No similar action.	Prohibit SRP holders from camping within 200 feet of riparian areas. If site-specific analysis can demonstrate that there will be no impacts on riparian vegetation or proper functioning condition, then exceptions could be granted. Prohibit camping in alcoves, adjacent to rock art sites, and within historic or prehistoric sites listed or eligible for listing on the NRHP. Additional camping restrictions may be included on SRPs to reduce or eliminate impacts on archaeological sites.			
2072	REC:1.1	X	X	X	X	Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	Within SRMAs and RMZs, until implementation-level planning is completed, dispersed vehicle camping would be allowed only in previously disturbed areas along designated routes.			
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
2073	REC:1.2	X	X	X	X	Approve, under permit, special events and commercial operations if the event is consistent with other plan management.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Issuance of an SRP is a discretionary action, consistent with current BLM policy for activities that (1) support recreation and visitor services objectives/direction, (2) satisfy a public demand that is not being met, and (3) would not cause public health and safety issues. Note:

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
										the BLM has discretion over whether to issue an SRP (43 CFR 2932.26).
2074	REC:2.5 REC:2.6	X	X	X	X	Group size will be limited to 25 people in the Passage and Outback Zones. Permits for groups over 25 people will be considered in the Passage and Outback Zones, if the number of people and the activities proposed are consistent with the protection of monument resources. Appropriate NEPA analysis will be prepared on areas where permits could be authorized. These permits will require that adequate sanitation and trash collection are provided, and that activities take place in areas where resources will not be damaged. In the Primitive Zone, group size will be limited to 12 people and 12 pack animals. Within the Paria River corridor in the Primitive Zone, permits could be approved for groups over 12 people up to a maximum of 25 people. In order to protect monument resources, it may become necessary to place limits on the overall numbers of people and/or pack animals allowed, or to further restrict group sizes in areas where resource damage is occurring.	Within WSAs, group size will be limited to eight people. Groups over eight would require a letter of agreement by the authorized officer or an SRP. Group size limits in WSAs supersede ERMA, SRMA, and RMZ group size limits.	Within WSAs, group size will be limited to 12 people. Groups over 12 would require a letter of agreement by the authorized officer or an SRP. Group size limits in WSAs supersede ERMA, SRMA, and RMZ group size limits.	Within WSAs, group size will be limited to 25 people. Groups over 25 would require a letter of agreement by the authorized officer or an SRP. Group size limits in WSAs supersede ERMA, SRMA, and RMZ group size limits.	Within WSAs, group size will be limited to 25 people unless otherwise noted in SRMA/RMZ management actions. Groups over 25 would require approval of the authorized officer. Group size limits in WSAs supersede ERMA, SRMA, and RMZ group size limits. On a case-by-case basis, group size limits, where applicable, could be adjusted within WSAs for consistency with group size limits on adjacent lands (e.g., NPS land, KFO land).
2075	REC:1.2	X	X	X	X	No similar action.	No similar action.	Prohibit non-motorized/non-mechanized cross-country competitive events. Allow non-motorized/mechanized competitive events only along designated routes.	Allow non-motorized/non-mechanized cross-country competitive events on a case-by-case basis.	Allow non-motorized/non-mechanized cross-country competitive events on a case-by-case basis.
2076	REC:1.2				X	No similar action.	No similar action.	Prohibit mechanized cross-country competitive events. Allow mechanized competitive events only along designated routes.	Allow mechanized cross-country competitive events on a case-by-case basis.	Allow mechanized cross-country competitive events on a case-by-case basis.
2077	REC:2.5 REC:2.6				X	No similar action.	Close developed recreation sites to mineral material disposals.	Same as Alternative B.	Same as Alternative B.	Close developed recreation sites to mineral material disposals.
2078	REC:1.2	X	X	X	X	No similar action.	No similar action.	Delineate parking areas adjacent to major travel corridors (e.g., Hole-in-the-Rock, Skutumpah, and Cottonwood Roads) and other recreation locations to support authorized large group events in order to avoid congestion on the major travel corridor.	Same as Alternative C.	Delineate parking areas adjacent to major travel corridors (e.g., Hole-in-the-Rock, Skutumpah, and Cottonwood Roads) and other recreation locations to support authorized large group events in order to avoid congestion on the major travel corridor.
2079	REC:2.4	X	X	X	X	No similar action.	Prohibit burning pallets and construction material.	Same as Alternative B.	No similar action.	No similar action.
Special and Extensive Recreation Management Areas										
2080	REC:1 REC:2	X	X	X	X	Continue to manage the Escalante Canyons, Paria/Hackberry, and Paria Canyons and Plateaus as SRMAs (Maps 73 and 74). Fiftymile Mountain, the Highway 12 corridor, and the Highway 89 corridor will also be SRMAs. Manage the Calf Creek Recreation Area, Deer Creek Recreation Area, Devils Garden Outstanding Natural Area, and Dance Hall Rock Historic Site. Allow camping in developed campgrounds or in designated primitive camping areas in the	Designate the following SRMAs, ERMA, and RMZs (Map 75): • Nephi Pasture SRMA (147,089 acres) • Paria-Hackberry SRMA (273,710 acres) ○ Paria-River RMZ (181 acres) ○ Cottonwood Road RMZ (5,290 acres) • Fiftymile Mountain SRMA (157,605 acres) • Escalante Canyons SRMA (411,766 acres) ○ Calf Creek RMZ (6,538 acres) ○ Burr Trail RMZ (2,833 acres) ○ Spencer Flat RMZ (2,053 acres)	Designate the following SRMAs, ERMA, and RMZs, (Map 76): • Nephi Pasture SRMA (147,089 acres) • Paria-Hackberry SRMA (273,710 acres) ○ Paria-River RMZ (181 acres) ○ Cottonwood Road RMZ (5,290 acres) • Fiftymile Mountain SRMA (157,605 acres) • Escalante Canyons SRMA (411,766 acres) ○ Calf Creek RMZ (6,538 acres) ○ Burr Trail RMZ (5,839 acres) ○ Spencer Flat RMZ (2,053 acres)	Do not designate any SRMAs. Manage the Planning Area as the Kanab-Escalante ERMA with RMZs (Map 77). • Kanab-Escalante ERMA (1,825,630 acres) • Little Desert RMZ (2,528 acres) • Calf Creek RMZ (6,538 acres) • Burr Trail RMZ (5,839 acres) • Hole-in-the-Rock RMZ (15,227 acres)	Designate the following SRMAs, ERMAs, and RMZs (Map 78): • Calf Creek SRMA (6,956 acres) • Burr Trail SRMA (5,839 acres) (Burr Trail SRMA GSENM 2,833 acres, Burr Trail SRMA KFO 3,006 acres) ○ Deer Creek RMZ (641 acres) ○ The Gulch RMZ (78 acres) • Hole-in-the-Rock Road SRMA (17,556 acres) ○ Dance Hall Rock RMZ (639 acres) ○ Dry Fork Wash RMZ (1,178 acres)

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	○ Hole-in-the-Rock RMZ (15,227 acres) • Circle Cliffs SRMA (100,611 acres) • Highway 12 SRMA (24,645 acres) ○ Little Desert RMZ (2,528 acres) • Highway 89 SRMA (41,302 acres) • Skutumpah Road SRMA (3,026 acres) • Paria Canyons Vermilion Cliffs SRMA (30,011 acres) • Kanab-Escalante ERMA (678,694 acres)	○ Hole-in-the-Rock RMZ (80,140 acres) • Circle Cliffs SRMA (100,611 acres) • Highway 12 SRMA (24,645 acres) ○ Little Desert RMZ (2,528 acres) • Highway 89 SRMA (41,302 acres) • Skutumpah Road SRMA (3,026 acres) • Paria Canyons Vermilion Cliffs SRMA (30,011 acres) • Kanab-Escalante ERMA (678,694 acres)		○ Devil's Garden RMZ (629 acres) ○ 20-Mile Dinosaur Tracks RMZ (328 acres) ○ Egypt Slot Canyons RMZ (6,253 acres) • Skutumpah SRMA (1,477 acres) • Paria Canyons Vermilion Cliffs SRMA (30,011 acres) • GSENM ERMA (987,198 acres) ○ Cottonwood Road RMZ (2,207 acres in KEPA) • KEPA ERMA (805,908 acres) ○ Little Desert RMZ (2,528 acres) ○ Cottonwood Road RMZ (3,083 acres in KEPA)
2081	REC:1 REC:2			X	X	No similar action. The area is not managed as an SRMA.	**Nephi Pasture SRMA** (147,089 acres) • *Competitive use*: Prohibit motorized or non-motorized competitive events. • *Organized group events/activity use*: Limit to 12 people or fewer. Groups over 12 require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited on designated trails, where appropriate. • *Stock use event /activity:* Allow cross-country travel for equestrian use only. • *Camping:* Allow dispersed camping. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use*: Require self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *ROWs:* Manage as ROW avoidance area.	**Nephi Pasture SRMA** (147,089 acres) • *Competitive use*: Allow motorized events except high-speed events. Allow non-motorized competitive events. • *Organized group events/activity use:* Limit to 25 people or fewer. Groups over 25 would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited on designated routes, where appropriate. • *Stock use event/activity:* Allow cross-country travel for equestrian use. • *Camping:* Allow dispersed camping. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use*: Encourage self-registered permits. • *Leasable Minerals: KEPA -* Apply Controlled Surface Use and Timing Limitation Stipulations for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description). • *Mineral materials: KEPA -* Open to mineral material disposals.	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.
2082	REC:1 REC:2		X	X	X	Activities in this SRMA include backpacking, canyoneering, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Emphasize equestrian opportunities in Paria Canyon, and backpacking opportunities in Hackberry Canyon. Potential permit systems could address general public use and commercial users. Allow camping in developed campgrounds or in designated primitive camping in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	**Paria Hackberry SRMA** (273,710 acres) • *Competitive use*: Prohibit motorized or non-motorized competitive events in WSA portion of the SRMA. • *Organized group events/activity use*: Allow up to 12 people and 12 pack stock. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Allow on designated routes, where appropriate. Prohibit mechanized events in WSA portion of the SRMA. • *Stock use event/activity:* Allow cross-country travel for equestrian use only.	**Paria Hackberry SRMA** (273,710 acres) • *Competitive use*: Prohibit. • *Organized group events/activity use*: Allow up to 12 people and 12 pack stock. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Allow on designated routes. • *Stock use event/activity:* Allow cross-country travel for equestrian use only. • *Camping:* Allow dispersed camping. • *Campfires:* Prohibit fires in the Paria-Hackberry Canyons. In all other areas, encourage fire pans and allow collection of	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							• *Camping:* Allow dispersed camping. • *Campfires:* Prohibit fires in the Paria-Hackberry Canyons. In all other areas, encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use*: Require self-registered permits. • *Waste:* Require disposable, self-contained human waste management systems within 300 feet of riparian areas. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *ROW and renewable energy:* Manage as ROW avoidance area.	dead and down wood in areas where campfires are allowed. • *Overnight use*: Self-registered permits are not required. • *Waste:* Require disposable, self-contained human waste management systems within 300 feet of riparian areas. • *Leasable minerals: KEPA -* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description). • *Mineral materials: KEPA -* Open to mineral material disposals. • *ROW and renewable energy:* Open to ROWs.		
2083	REC:1 REC:2		X	X	X	Activities in this SRMA include backpacking, canyoneering, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Emphasize equestrian opportunities in Paria Canyon, and backpacking opportunities in Hackberry Canyon. Potential permit systems could address general public use and commercial users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones. Within the Paria River corridor in the Primitive Zone, permits could be approved for groups over 12 people up to a maximum of 25 people.	**Paria Hackberry SRMA** ***Paria River RMZ*** (181 acres) Apply management for the Paria Hackberry SRMA in the RMZ within the river bottom, unless noted below: • *Organized group events/activity use:* Allow up to 12 people and 12 pack stock. Groups over 12 would require approval of the authorized officer. • *Mechanized event/activity:* Prohibit mechanized events in WSA portion of the RMZ. • *Camping:* Allow dispersed camping. • *Campfires:* Prohibit fires. • *Leasable minerals: KEPA -* Close to mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW exclusion area.	**Paria Hackberry SRMA** ***Paria River RMZ*** (181 acres) Apply management for the Paria Hackberry SRMA in the RMZ within the river bottom, unless noted below: • *Organized group events/activity use:* Allow up to 25 people and 25 pack stock. Groups over 25 would require approval of the authorized officer. • *Mechanized event/activity:* Allow horse-drawn wagon events. • *Camping:* Allow dispersed camping. • *Campfires:* Prohibit fires. • *Leasable minerals: KEPA -* Close to mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW exclusion area.	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.
2084	REC:1 REC:2		X		X	Activities in this SRMA include backpacking, canyoneering, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Emphasize equestrian opportunities in Paria Canyon, and backpacking opportunities in Hackberry Canyon. Potential permit systems could address general public use and commercial users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	**Paria Hackberry SRMA** ***Cottonwood Road RMZ*** (5,290 acres) Apply management for the Paria Hackberry SRMA in the RMZ, unless noted below: • *Competitive use*: Prohibit competitive events. • *Organized group event/activity use:* Allow up to 12 along the roadway. Groups over 12 would require approval of the authorized officer. • *Camping:* Allow in developed campgrounds or in designated camping areas. Prohibit dispersed camping once campgrounds are developed and camping areas are designated. • *Campfires:* Allow only in designated fire grates, designated fire pits, or mandatory fire	**Paria Hackberry SRMA** ***Cottonwood Road RMZ*** (5,290 acres) Apply management for the Paria Hackberry SRMA in the RMZ, unless noted below: • *Competitive use*: Prohibit motorized competitive events. • *Organized group event/activity use:* Allow up to 25 along the roadway. Groups over 25 would require approval of the authorized officer. • *Camping:* Allow in developed campgrounds or in designated camping areas. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.	Manage as the Kanab-Escalante ERMA.	**GSENM and KEPA ERMAs** ***Cottonwood Road RMZ*** (5,290 acres) Apply management for the GSENM ERMA or KEPA ERMA, or other management areas as applicable, in the RMZ, unless noted below: • *Competitive use*: Allow non-motorized competitive events. Prohibit motorized competitive events unless it would not affect the monument objects. • *Organized group event/activity use:* Allow up to 50 along the roadway. Groups over 50 would require approval of the authorized officer. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow

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Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							pans, and prohibit wood collection for campfires. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance area.	• *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Open to ROWs.		dispersed camping until designated camp sites are developed. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable minerals: KEPA -* Open to mineral entry. • *ROWs and renewable energy*: Open to ROWs.
2085	REC:1 REC:2		X		X	Activities in this SRMA include equestrian use, backpacking, and hunting. The recreation experience will be primitive, uncrowded, and remote. Do not encourage visitors to go to this area and substantially limit commercial outfitting. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	**Fiftymile Mountain SRMA** (157,605 acres) *Organized group event/activity use:* Limit to 12 people and 12 pack stock. Groups over 12 people would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow dispersed camping. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use*: Require self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance area.	**Fiftymile Mountain SRMA** (157,605 acres) *Organized group events/activity use:* Limit to 12 people and 12 pack stock, and up to 25 people on the Fiftymile Bench. Groups over 25 people on the Fiftymile Bench would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity*: Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow dispersed camping. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals: KEPA -* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description). • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *ROWs and renewable energy:* Open to ROWs.	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.
2086	REC:1 REC:2	X			X	Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users.	**Escalante Canyons SRMA** (411,766 acres) • *Competitive use*: Allow organized events and non-motorized competitive events on paved and primary dirt roads. • *Organized group event/activity use*: Limit to 12 people and 12 pack stock. Prohibit motorized group events. Groups over 12 (outside the WSA) would require approval of the authorized officer.	**Escalante Canyons SRMA** (411,766 acres) • *Competitive use*: Allow organized events and non-motorized competitive events on paved and primary dirt roads. • *Organized group event/activity use*: Limit to 12 people and 12 pack stock or OHVs. Groups over 12 (outside the WSA) would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes.	Manage as the Kanab-Escalante ERMA.	Manage portions as the Calf Creek SRMA, Burr Trail SRMA, and Hole-in-the-Rock Road SRMA (see records: 2087, 2088, and 2092). The remainder of the area to be managed as ERMAs.

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						Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	• *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow dispersed primitive camping. • *Campfires:* Prohibit campfires in the Escalante Canyons. • *Overnight use:* Require self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance area.	• *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow dispersed primitive camping. • *Campfires:* Prohibit campfires in canyon bottoms. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing in KEPA portion. • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Open to ROWs.		
2087	REC:1 REC:2	X				Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	**Escalante Canyons SRMA** ***Calf Creek RMZ*** (6,538 acres) Apply management for the Escalante Canyon SRMA in the RMZ, unless noted below: • *Competitive use*: Prohibit competitive events. • *Vending*: Allow in campgrounds. • *Organized group event/activity use:* Allow up to 12 people; no group size limit on the lower or upper Calf Creek Falls Trail or campground. Prohibit motorized groups in the RMZ. • *Motorized event/activity:* Close to motorized activity. • *Mechanized event/activity:* Close to mechanized activity. • *Prohibit rappelling* from the lower and upper falls for public health and safety. • *Camping:* Allow in developed campgrounds or in designated camping areas. Prohibit dispersed camping. • *Campfires:* Allow campfires only in designated fire grates in the RMZ. • *Overnight use:* Require self-registered permits. • *ROWs and renewable energy:* Manage as ROW exclusion area.	**Escalante Canyons SRMA** ***Calf Creek RMZ*** (6,538 acres) Apply management for the Escalante Canyon SRMA in the RMZ, unless noted below: • *Competitive use*: Prohibit competitive events. • *Vending*: Allow in campgrounds. • *Organized group event/activity use:* Allow up to 12 people; no group size limit on the lower or upper Calf Creek Falls Trail or campground. Prohibit motorized groups in the RMZ. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Prohibit rappelling* from the lower and upper falls for public health and safety. • *Camping:* Prohibit dispersed camping along the upper and lower Calf Creek Falls Trails. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits. • *ROWs and renewable energy:* Manage as ROW exclusion area.	Same as Alternative C but within the Kanab-Escalante lands ERMA, and: • *ROWs and renewable energy:* Manage as ROW avoidance area.	**Calf Creek SRMA** (6,956 acres) • *Competitive use*: Allow non-motorized competitive events. • *Organized group event/activity use*: Allow up to 50 people on Lower Calf Creek Falls Trail. Permits for over 50 people may be approved by the authorized officer. Outside of Lower Calf Creek Falls Trail, limit group size to 25 people. Prohibit motorized group events. Groups over 25 would require approval of the authorized officer • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping, outside of developed campground, until designated camp sites are developed. • *Campfires:* Encourage fire pans and allow collection of dead and down wood, outside of developed campground, in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits outside of developed campground. Require self-registered camping permit in developed campground fee area. • *ROWs and renewable energy:* Open to ROWs, unless otherwise noted in other RMP prescriptions.
2088	REC:1 REC:2	X			X	Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and	**Escalante Canyons SRMA** ***Burr Trail RMZ*** (includes Deer Creek RA) (2,833 acres)	**Escalante Canyons SRMA**	**Kanab-Escalante ERMA** ***Burr Trail RMZ*** (5,839 acres)	**Burr Trail SRMA (5,839 acres)**

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						equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users.
						Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.
							Apply management for the Escalante Canyon SRMA in the RMZ, unless noted below:
							• *Competitive use*: Allow organized events and non-motorized competitive events on paved roads in coordination with Garfield County.
							• *Organized group event/activity use*: Allow 25 people or fewer. Groups over 25 could be approved by the authorized officer.
							• *Motorized event/activity:* Limited to designated routes.
							• *Mechanized event/activity:* Limited to designated routes.
							• *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed.
							• *Campfires:* Allow only in designated fire grates, designated fire pits, or mandatory fire pans and prohibit wood collection for campfires.
							• *Leasable minerals: KEPA –* Close to leasable mineral development
							• *Mineral materials: KEPA -* Close to mineral material disposals.
							• *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry.
							• *ROWs and renewable energy:* Manage as ROW avoidance area.
								Burr Trail RMZ – Same as Alternative B, except 5,839 acres and:
								• *Leasable minerals: KEPA -* Apply Controlled Surface Use stipulation for leasable mineral development.
								• *Mineral materials: KEPA -* Close to exclusive pits, but open to community pits of 5 acres or fewer of unreclaimed area. Allow expansion of existing pits with application of visual mitigation measures to reduce impacts.
								• *Locatable minerals: KEPA -* Do not recommend for withdrawal.
								• *ROWs and renewable energy:* Manage as ROW avoidance area.
									Same as Alternative B except:
									• *Leasable minerals: KEPA -* Apply Controlled Surface Use stipulation for leasable mineral development.
									• *Mineral materials: KEPA -* Open to mineral material disposals.
									• *Locatable minerals: KEPA -* Do not recommend for withdrawal.
									• *ROWs and renewable energy:* Manage as ROW avoidance area.
									  ○ GSENM: Manage as ROW avoidance.
									  ○ KEPA: Open to ROWs.
										• *Competitive use*: Allow non-motorized competitive events.
										• *Organized group event/activity use*: Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Within WSAs, group size will be limited to 25 people. Groups over 25 people would require approval of the authorized officer. On a case-by-case basis, group size limits, where applicable, could be adjusted in the RMZ for consistency with group size limits on adjacent lands (e.g., NPS lands).
										• *Motorized event/activity:* Limited to designated routes.
										• *Mechanized event/activity:* Limited to designated routes.
										• *Stock use event/activity:* Allow cross-country travel.
										• *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed.
										• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.
										• *Overnight use:* Encourage self-registered permits.
										• *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing.
										• *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts.
										• *Locatable minerals: KEPA -* Open to mineral entry.
										• *ROWs and renewable energy:* Open to ROWs, unless otherwise noted in other RMP prescriptions.

2089		X				Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	Manage in the Escalante Canyons SRMA and the Burr Trail RMZ as described above.	Manage in the Escalante Canyons SRMA and the Burr Trail RMZ as described above.	Manage in the Kanab-Escalante ERMA.	**Burr Trail SRMA (5,839 acres)** ***Deer Creek RMZ (641 acres)*** Same management as the Burr Trail SRMA, unless noted below. • *Competitive use*: Allow non-motorized competitive events. • *Organized group event/activity use*: Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Within WSAs, group size will be limited to 25 people. Groups over 25 people would require approval of the authorized officer. • *Motorized event/activity*: Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes.

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										• ***Stock use event/activity:*** Allow cross-country travel. • ***Camping:*** Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • ***Campfires:*** Encourage fire pans or use of developed fire pits and allow collection of dead and down wood in areas where campfires are allowed, unless otherwise posted. • ***Overnight use:*** Encourage self-registered permits. Require self-registered camping permit in developed campground fee area. • ***ROWs and renewable energy:*** Manage as ROW avoidance. Those parts within WSA, manage as ROW exclusion area.
2090		X				Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	Manage in the Escalante Canyons SRMA and the Burr Trail RMZ as described above.	Manage in the Escalante Canyons SRMA and the Burr Trail RMZ as described above.	Manage in the Kanab-Escalante ERMA.	**Burr Trail SRMA (5,839 acres)** ***The Gulch RMZ (78 acres)*** Same management as the Burr Trail SRMA, unless noted below. • ***Competitive use***: Allow non-motorized competitive events. • ***Organized group event/activity use:*** Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Within WSAs, group size will be limited to 25 people. Groups over 25 people would require approval by the authorized officer. • ***Motorized event/activity:*** Limited to designated routes. • ***Mechanized event/activity:*** Limited to designated routes. • ***Stock use event/activity:*** Allow cross-country travel. • ***Camping:*** Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • ***Campfires:*** Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • ***Overnight use:*** Encourage self-registered permits. • ***ROWs and renewable energy:*** Manage as ROW avoidance. Those parts within WSA, manage as ROW exclusion area.
2091	REC:1 REC:2	X				Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit	**Escalante Canyons SRMA** ***Spencer Flat RMZ*** (2,053 acres) Apply management for the Escalante Canyon SRMA in the RMZ, unless noted below: • ***Competitive use***: Allow non-motorized competitive use. • ***Organized group event/activity use***: Allow up to 12 people. Consider permits for over 12	**Escalante Canyons SRMA** ***Spencer Flat RMZ*** (2,053 acres) Apply management for the Escalante Canyon SRMA in the RMZ, unless noted below: • ***Competitive use***: Allow non-motorized competitive use. • ***Organized group event/activity use:*** Allow up to 25 people. Consider permits for over 25	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.

Recreation and Visitor Services (REC)										
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						systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	people in the SRMA, if the number of people and the activities proposed are consistent with resource protection. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Prohibit dispersed camping once campgrounds are developed and camping areas are designated. • *Campfires:* Allow propane/non-wood fires only. Prohibit wood collection for campfires. • *Overnight use:* Require self-registered permits. • *ROWs and renewable energy:* Manage as ROW exclusion area.	people in the SRMA, if the number of people and the activities proposed are consistent with resource protection • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Prohibit dispersed camping once campgrounds are developed and camping areas are designated. • *Campfires:* Allow only in designated fire grates, designated fire pits, or mandatory fire pans. Prohibit wood collection for campfires. • *Overnight use:* Encourage self-registered permits. • *ROWs and renewable energy:* Manage as ROW avoidance area.		
2092	REC:1 REC:2	X	X		X	Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	**Escalante Canyons SRMA** ***Hole-In-the-Rock RMZ –*** (15,227 acres) Apply management for the Escalante Canyon SRMA in the RMZ, unless noted below: • *Competitive use*: Allow non-motorized competitive events on roads in coordination with counties. • *Organized group event/activity use:* Allow up to 25 people. Permits for over 25 people may be approved by the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow dispersed camping. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Require self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing • *Mineral materials: KEPA -* Close to mineral material disposals. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance area.	**Escalante Canyons SRMA** ***Hole-In-the-Rock RMZ –*** (80,140 acres) Apply management for the Escalante Canyon SRMA in the RMZ, unless noted below: • *Competitive use*: Allow non-motorized/non-mechanized competitive events. • *Organized group event/activity use:* Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Encourage and promote traditional uses and trail reenactments for large groups. A larger group size will support the traditional uses and the Traditional Cultural Property Ethnographic study being developed by the NPS and BLM. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion	Same as Alternative B, but within the Kanab-Escalante ERMA, and: • *Leasable minerals:* Apply Controlled Surface Use stipulation for mineral leasing. Prohibit oil and gas surface facilities within viewshed of Dance Hall Rock, Hole-in-the-Rock Trail, and trailheads providing access to Escalante Canyons. • *Organized group event/activity use:* Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Encourage and promote traditional uses and trail reenactments for large groups. A larger group size will support the traditional uses and the Traditional Cultural Property Ethnographic study being developed by the NPS and BLM. • *Mineral materials:* Open to mineral material disposals. • *Locatable minerals:* Open to mineral entry. • *ROWs and renewable energy:* Open to ROWs.	**Hole-In-the-Rock Road SRMA** (17,556 acres) • *Competitive use*: Allow non-motorized competitive events. • *Organized group event/activity use*: Allow up to 50 people, unless otherwise noted in RMZ prescriptions. Permits for over 50 people may be approved by the authorized officer. Encourage and promote traditional uses and trail reenactments for large groups. A large group size will support the traditional uses and the Traditional Cultural Property Ethnographic study being developed by the NPS and BLM. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing, unless otherwise noted in RMZ prescriptions. *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to

Recreation and Visitor Services (REC)									
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
								of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable minerals: KEPA -* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Open to ROWs.		reduce visual impacts, unless otherwise noted in RMZ prescriptions. • *Locatable minerals: KEPA -* Open to mineral entry unless already withdrawn. • *ROWs and renewable energy:* Open to ROWs, unless otherwise noted in other RMP prescriptions.
2093		X			X	Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Kanab-Escalante ERMA.	**Hole-in-the-Rock Road SRMA** ***Dance Hall Rock RMZ (639 acres)*** Same management as the Hole-in-the-Rock SRMA, unless noted below. • *Competitive use*: Allow non-motorized/non-mechanized competitive events. • *Organized group event/activity use*: Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Encourage and promote traditional uses and trail reenactments for large groups. A larger group size will support the traditional uses and the Traditional Cultural Property Ethnographic study being developed by the NPS and BLM. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • *Campfires:* Prohibit campfires. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing, unless otherwise noted in RMZ prescriptions. • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts, unless otherwise noted in RMZ prescriptions. • *Locatable minerals:* KEPA - Open to mineral entry unless already withdrawn • *ROWs and renewable energy:* Manage as ROW avoidance area.
2094					X	Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Kanab-Escalante ERMA.	**Hole-in-the-Rock Road SRMA** ***Dry Fork Wash RMZ (1,178 acres)*** Same management as the Hole-in-the-Rock SRMA, unless noted below. • *Competitive use*: Allow non-motorized/non-mechanized competitive events.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones Prohibit dispersed primitive camping in these zones.				• *Organized group event/activity use*: Limit group size to 25 people. Prohibit motorized group events. Groups over 25 would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • *Campfires:* Prohibit campfires. • *Overnight use:* Encourage a self- registered permit. • *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials:* Close to mineral material disposals. • *Locatable minerals:* Open to mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance area. Those parts within WSA, manage as ROW exclusion area.
2095			X			Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Kanab-Escalante ERMA.	**Hole-in-the-Rock Road SRMA** ***Devil's Garden RMZ (629 acres)*** Same management as the Hole-in-the-Rock SRMA, unless noted below. • *Competitive use*: Allow non-motorized/non-mechanized competitive events. • *Organized group event/activity use*: Limit group size to 25 people. Prohibit motorized group events. Groups over 25 would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • *Campfires:* Prohibit campfires. • *Overnight use:* Encourage a self-registered permit. • *Leasable minerals:* Already closed in GSENM. • *Mineral materials:* Already closed in GSENM. • *Locatable minerals:* Already withdrawn in GSENM. • *ROWs and renewable energy:* Manage as ROW avoidance area.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
2096			X			Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Kanab-Escalante ERMA.	**Hole-in-the-Rock Road SRMA** ***20-Mile Dinosaur Track RMZ (328 acres)*** Same management as the Hole-in-the-Rock SRMA, unless noted below. • *Competitive use*: Allow non-motorized/non-mechanized competitive events. • *Organized group event/activity use*: Limit group size to 25 people. Prohibit motorized group events. Groups over 25 would require approval of the authorized officer. • *Motorized event/activity*: Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. • *Campfires:* Prohibit campfires. • *Overnight use:* Encourage a self- registered permit. • *Leasable minerals:* Already closed in GSENM. • *Mineral materials:* Already closed in GSENM. • *Locatable minerals:* Already withdrawn in GSENM. • *ROWs and renewable energy:* Manage as ROW avoidance area.
2097					X	Activities in this SRMA include backpacking, canyoneering, non-motorized boating, and equestrian use. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters will be available. Potential permit systems could address general public, commercial, and administrative users. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Escalante Canyons SRMA and associated RMZs as described above.	Manage in the Kanab-Escalante ERMA.	**Hole-in-the-Rock Road SRMA** ***Egypt Slot Canyons RMZ (6,253 acres)*** Same management as the Hole-in-the-Rock SRMA, unless noted below. • *Competitive use*: Allow non-motorized competitive events. • *Organized group event/activity use*: Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Within WSAs, group size will be limited to 25 people. Groups over 25 people would require approval of the authorized officer. On a case-by-case basis, group size limits, where applicable, could be adjusted in the RMZ for consistency with group size limits on adjacent lands (e.g., NPS lands). • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
										• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials:* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable minerals:* Open to mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance.
2098	REC:1 REC:2				X	No similar action. The area is not managed as an SRMA.	**Circle Cliffs SRMA** (100,611 acres) • *Competitive use*: Allow motorized or non-motorized competitive events on paved and primary dirt roads. • *Organized group event/activity use:* Allow 25 people or fewer. Groups over 25 would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel for equestrian use only. • *Camping:* Allow dispersed camping. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Require self-registered permits. • *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials:* Closed to mineral material disposals. • *ROWs:* Manage as ROW avoidance area	**Circle Cliffs SRMA** (100,611 acres) • *Competitive use*: Allow motorized events except high-speed events. Allow non-motorized competitive events. • *Organized group events/activity use:* Allow 25 people or fewer. Groups over 25 would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited on designated routes, where appropriate. • *Stock use event/activity:* Allow cross-country travel for equestrian use. • *Camping:* Allow dispersed camping. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals:* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description). • *Mineral materials:* Open to mineral material disposals. • *ROWs:* Open to ROWs	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.
2099	REC:1 REC:2	X	X		X	Activities in this SRMA include scenic driving, day-use hiking, camping, equestrian use, road bicycling, and scenic and interpretive viewing. Focus the recreation experience on learning about geology, history, archaeology, biology, and paleontology, in addition to scenic viewing. Develop short interpretive trails and scenic overlooks to encourage visitors to learn more about these monument resources. Opportunities will accommodate all visitors. Disseminate educational materials at information stations located in Boulder,	**Highway 12 SRMA** (24,645 acres) • *Competitive use*: Allow non-motorized/non-mechanized competitive events. • *Organized group event/activity use:* Do not enact group size requirements. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel.	**Highway 12 SRMA** (24,645 acres) • *Competitive use*: Allow non-motorized/non-mechanized competitive events. • *Organized group event/activity use:* Do not apply group size requirements. • *Motorized event/activity:* Limited to designated routes outside the Little Desert RMZ (22,084 acres). • *Mechanized event/activity:* Limited to designated routes outside the Little Desert RMZ (22,084 acres). • *Stock use event/activity:* Allow cross-country travel.	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Escalante, and Cannonville to further information about these resources. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	• *Camping:* Allow in developed campgrounds or in designated camping areas. Prohibit dispersed camping. • *Campfires:* Within GSENM, allow campfires only in designated fire grates, designated fire pits, or mandatory fire pans and prohibit wood collection for campfires. • *Overnight use:* Require self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *ROWs and renewable energy:* Manage as ROW avoidance area.	• *Camping:* Allow in developed campgrounds or in designated primitive camping areas. Prohibit dispersed primitive camping once campgrounds are developed and primitive camping areas are designated. • *Campfires:* Within GSENM, allow campfires only in designated fire grates, designated fire pits, or mandatory fire pans and prohibit wood collection for campfires. Within KEPA, encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *ROWs and renewable energy:* Open to ROWs.		

2100	REC:1
	REC:2
					X	Activities in this SRMA include scenic driving, day-use hiking, camping, equestrian use, road bicycling, and scenic and interpretive viewing. Focus the recreation experience on learning about geology, history, archaeology, biology, and paleontology, in addition to scenic viewing. Develop short interpretive trails and scenic overlooks to encourage visitors to learn more about these monument resources. Opportunities will accommodate all visitors. Disseminate educational materials at information stations located in Boulder, Escalante, and Cannonville to further information about these resources.
						Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.
							Highway 12 SRMA
							Little Desert RMZ – KEPA (2,528 acres) –
							Manage the Little Desert RMZ as limited for OHV and mechanized use to designated routes. Develop/designate new trails to accommodate implementation-level planning.
							Apply management for the Highway 12 SRMA in the RMZ, unless noted below:
							• *Competitive use*: Prohibit competitive events.
							• *Organized group event/activity use:* Allow up to 100 people, additional with permit and no resource damage.
							• *Motorized event/activity:* Limited to designated routes.
							• *Mechanized event/activity:* Limited to designated routes.
							• *Stock use event/activity:* Allow cross-country travel
							• *Camping:* Allow in developed campgrounds or in designated primitive camping areas. Allow dispersed camping once campgrounds are developed and camping areas are designated.
							• *Campfires:* Allow campfires only in designated fire grates, designated fire pits, or mandatory fire pans and prohibit wood collection for campfires.
							• *Overnight use:* Require self-registered permits.
							• *Grazing:* Make available for livestock grazing and trailing.
							• *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing.
								Highway 12 SRMA
								Little Desert RMZ – KEPA (2,528 acres) –
								• Manage the Little Desert RMZ as limited for OHV and mechanized use to designated routes except for the area designated open for mechanized and OHV use (116 acres open).
								Apply management for the Highway 12 SRMA in the RMZ, unless noted below:
								• *Competitive use*: Allow competitive events.
								• *Organized group event/activity use:* Do not enact group size requirements; address during implementation planning based on frequency and intensity of use.
								• *Motorized event/activity:* Limited to designated routes and open to cross-country travel where identified.
								• *Mechanized event/activity:* Limited to designated routes open to cross-country travel where identified.
								• *Stock use event/activity:* Allow cross-country travel.
								• *Camping:* Allow dispersed primitive camping in designated staging and camping areas within the OHV open areas, and in other locations outside of OHV open areas.
								  ○ *Allow designation of staging and camping areas for public safety.*
								• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.
								• *Overnight use:* Encourage self-registered permits for overnight camping.
									Kanab-Escalante ERMA
									Little Desert RMZ – KEPA (2,528 acres) –
									• Manage the entirety of the Little Desert RMZ area (2,528 acres) as open for mechanized and OHV use. Post discrete locations within the open area as closed to OHV use if necessary to resolve resource issues or concerns.
									• *Grazing:* Make available for livestock grazing and trailing.
									• *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing.
									• *Mineral materials:* Close to mineral material disposals.
									• *Locatable minerals:* Open to mineral entry.
									• *ROWs and renewable energy:* Manage as ROW exclusion area.
										KEPA ERMA
										Little Desert RMZ (2,528 acres) –
										• Manage the Little Desert RMZ as limited for OHV and mechanized use to designated routes except for the area designated open for mechanized and OHV use (116 acres open).
										• *Competitive use*: Allow competitive events.
										• *Organized group event/activity use:* Do not enact group size requirements; address during implementation planning based on frequency and intensity of use.
										• *Motorized event/activity:* Limited to designated routes and open to cross-country travel where identified.
										• *Mechanized event/activity:* Limited to designated routes and open to cross-country travel where identified.
										• *Stock use event/activity:* Allow cross-country travel.
										• *Camping:* Allow dispersed primitive camping in designated staging and camping areas within the OHV open areas, and in other locations outside of OHV open areas.
										  ○ Allow designation of staging and camping areas for public safety.
										• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.
										• *Overnight use:* Encourage self-registered permits for overnight camping.
										• *Grazing:* Make available for livestock grazing and trailing.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							• *Mineral materials:* Close to mineral material disposals. • *Locatable minerals:* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW exclusion area.	• *Grazing:* Make unavailable for livestock grazing, but open to trailing. • *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials:* Close to mineral material disposals. • *Locatable minerals:* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW exclusion area.		• *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials:* Open to mineral material disposals. • *Locatable minerals:* Open to mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance area.
2101	REC:1 REC:2		X	X	X	Activities in this SRMA include scenic driving, day-use hiking, camping, road and mountain bicycling, and scenic and interpretive viewing. Focus the recreation experience on learning about geology, history, archaeology, biology, and paleontology, in addition to scenic viewing. Develop short interpretive trails and scenic overlooks to encourage visitors to learn more about these monument resources. Opportunities will accommodate all visitors. Coordinate this corridor with the Vermilion Cliffs Highway Project. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	**Highway 89 SRMA** (41,302 acres) • *Competitive use*: Allow non-motorized/non-mechanized competitive events. • *Organized group event/activity use:* Do not apply group size requirements. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Cross-country travel allowed. • *Camping:* Dispersed primitive camping is not allowed within 1,320 feet of the Highway 89 corridor. • *Campfires:* Allow propane/non-wood fires only. Prohibit wood collection for campfires. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to mineral material disposals. • *ROWs and renewable energy:* Manage as ROW exclusion area.	**Highway 89 SRMA** (41,302 acres) • *Competitive use*: Prohibit high-speed motorized competitive events. • *Organized group event/activity use:* Do not apply group size requirements. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Prohibit dispersed primitive camping within 660 feet of the Highway 89 corridor. • *Campfires:* Encourage fire pans and dead and allow collection of down wood in areas where campfires are allowed. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Open to mineral material disposals. • *ROWs and renewable energy:* Open to ROWs.	Manage as the Kanab-Escalante ERMA.	Manage as the GSENM and KEPA ERMAs.
2102	REC:1 REC:2		X	X	X	No similar action. This area is not managed as an SRMA.	**Skutumpah Road SRMA** (3,026 acres) • *Competitive Use*: Prohibit motorized and non-motorized competitive events. • *Organized group event/activity use:* Allow 25 people or fewer. Groups over 25 could be approved by the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel for equestrian use only. • *Camping:* Allow dispersed primitive camping where resource damage does not occur. Prohibit camping within 0.25 mile of trailheads. • *Campfires:* Allow propane/non-wood fires only. Prohibit wood collection for campfires. • *Overnight use*: Require self-registered permits for overnight camping. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing .	**Skutumpah Road SRMA** (3,026 acres) • *Competitive use*: Allow motorized and non-motorized competitive events. Prohibit high-speed motorized competitive events. • *Organized group events/activity use:* Allow 50 people or fewer. Groups over 50 could be approved by the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes • *Stock use event/activity:* Allow cross-country travel for equestrian use only. • *Camping:* Allow dispersed primitive camping where resource damage does not occur. Prohibit camping within 0.25 mile of trailheads. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits for overnight camping.	Manage as the Kanab-Escalante ERMA.	**Skutumpah Road SRMA** (1,477 acres) • *Competitive use:* Allow non-motorized competitive events. Prohibit motorized competitive events unless it would not affect the monument objects. • *Organized group event/activity use:* Allow up to 50 people. Permits for over 50 people may be approved by the authorized officer. Within WSAs, group size will be limited to 25 people. Groups over 25 people would require approval of the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Allow cross-country travel. • *Camping:* Allow in developed campgrounds or in designated camping areas. Allow dispersed camping until designated camp sites are developed. ○ Allow designation of staging and camping areas for public safety.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							• *Mineral materials: KEPA -* Close to mineral material disposals. • *ROWs and renewable energy:* Manage as ROW avoidance area.	• *Leasable minerals: KEPA -* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description). • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *ROWs and renewable energy:* Open to ROWs.		• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use*: Encourage self-registered permits for overnight camping. • *Grazing:* Make available for livestock grazing and trailing. • *Leasable minerals: KEPA -* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials: KEPA -* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable Minerals: KEPA -* Open to mineral entry unless already withdrawn. • *ROWs and renewable energy:* Open to ROWs, unless otherwise noted in other RMP prescriptions.
2103	REC:1 REC:2				X	Activities in this SRMA include canyoneering, equestrian use, backpacking, hiking, hunting, and scenic touring along the House Rock Valley Road. Continue the overall primitive, uncrowded, and remote recreation experience. Overall social encounters will remain low compared to other southwest canyon hiking opportunities. However, a range of social encounters occur. Allow camping in developed campgrounds or in designated primitive camping areas in the Frontcountry and Passage Zones. Prohibit dispersed primitive camping in these zones.	**Paria Canyons Vermilion Cliffs SRMA** (30,011 acres) • *Competitive use*: Prohibit competitive events. • *Organized group event/activity use:* Allow up to 12 people. Permits for over 12 people may be approved by the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes. • *Stock use event/activity:* Prohibit in the Paria River corridor south of Whitehouse Campground and side canyons north of White House Campground; allow in the House Rock area to the wilderness boundary. • *Camping:* Allow in developed campgrounds or in designated camping areas. Prohibit camping along House Rock Valley Road. • *Campfires:* In campgrounds: allow campfires only in designated fire grates, designated fire pits, or mandatory fire pans and prohibit wood collection for campfires. In House Rock area: allow propane/non-wood fires only; prohibit wood collection for campfires. • *Overnight use:* Require self-registered permits for overnight camping. • *Leasable minerals:* Apply No Surface Occupancy stipulation for mineral leasing. • *Mineral materials:* Close to mineral material disposals. • *Locatable minerals:* Recommend withdrawal from mineral entry. • *ROWs and renewable energy:* Manage as ROW avoidance area.	**Paria Canyons Vermilion Cliffs SRMA** (30,011 acres) • *Competitive use*: Prohibit motorized competitive events; allow non-motorized competitive events. • *Organized group event/activity use:* Allow up to 25 people. Permits for over 25 people may be approved by the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes; authorize cross-country mechanized use in specific areas as identified in the TMP. • *Stock use event/activity:* Prohibit in the Paria River corridor south of White House Campground; allow in the House Rock area to the wilderness boundary. • *Camping:* Allow dispersed camping in designated areas. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use:* Encourage self-registered permits for overnight camping. • *Leasable minerals:* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description). • *Mineral materials:* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable minerals:* Recommend withdrawal from mineral entry.	Manage as the Kanab-Escalante ERMA.	**Paria Canyons Vermilion Cliffs SRMA** (30,011 acres) • *Competitive use*: Prohibit motorized competitive events; allow non-motorized competitive events. • *Organized group event/activity use:* Allow up to 25 people. Permits for over 25 people may be approved by the authorized officer. • *Motorized event/activity:* Limited to designated routes. • *Mechanized event/activity:* Limited to designated routes; authorize cross-country mechanized use in specific areas as identified in the TMP. • *Stock use event/activity:* Prohibit in the Paria River corridor south of White House Campground; allow in the House Rock area to the wilderness boundary. • *Camping:* Allow dispersed camping in designated areas. • *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed. • *Overnight use*: Encourage self-registered permits for overnight camping. • *Leasable minerals:* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description). • *Mineral materials:* Close to exclusive pits. Open to community pits 5 acres or fewer of unreclaimed area. Allow expansion of existing pits. Apply visual mitigation to reduce visual impacts. • *Locatable minerals:* Open to mineral entry. • *ROWs and renewable energy:* Open to ROWs.

Recreation and Visitor Services (REC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
								• *ROWs and renewable energy:* Open to ROWs.		
Extensive Recreation Management Areas										

2104	REC:1
	REC:2
		X	X	X	X	Areas outside SRMAs were not managed as an ERMA.	**Kanab-Escalante ERMA** (678,694 acres)
							• *Competitive events:* Allow non-motorized competitive events. Prohibit motorized competitive events.
							• *Campfires:* Allow campfires only in designated fire grates, designated fire pits, or mandatory fire pans and prohibit wood collection for campfires.
							• *Group size: paved roads:* Do not apply group size limit.
							  • *Primary collector roads (e.g., Burr Trail, Hole-in-the-Rock, Cottonwood, Skutumpah Roads):* Allow up to 25 people. Permits for over 25 people could be approved by the authorized officer.
							• *Leasable minerals: KEPA -* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description).
							• *Mineral materials: KEPA -* Close to mineral material disposals.
							• *ROWs and renewable energy:* Manage as ROW avoidance area.
								Kanab-Escalante ERMA (678,694 acres)
								• *Competitive events:* Allow motorized events. Allow high-speed motorized competitive events in designated areas. Allow non-motorized competitive events.
								• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.
								• *Group size:*
								  • *Paved roads:* Do not apply group size limit.
								  • *Primary collector roads (e.g., Burr Trail, Hole-in-the Rock, Cottonwood, Skutumpah Roads):* Allow up to 50 people. Permits for over 50 people could be approved by the authorized officer.
								• *Leasable minerals: KEPA -* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description).
								• *Mineral materials: KEPA -* Open to mineral material disposals.
								• *ROWs and renewable energy:* Open to ROWs.
									Kanab-Escalante ERMA (1,835,630 acres)
									• *Competitive events:* Allow competitive events.
									• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.
									• *Group size:* Group size is limited to 50 within ERMAs. More restrictive group size limits could be established within WSAs or areas adjacent to NPS units through implementation-level planning. Permits for over these group sizes could be approved by the authorized officer.
									• *Leasable minerals: KEPA -* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description).
									• *Mineral materials: KEPA -* Open to mineral material disposals.
									• *ROWs and renewable energy:* Open to ROWs.
										GSENM ERMA (987,198 acres)
										• *Competitive events:* Allow non-motorized competitive events. Prohibit motorized competitive events unless it would not affect the monument objects.
										• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.
										• *Group size:* Group size is limited to 50 within ERMAs. More restrictive group size limits could be established within WSAs or areas adjacent to NPS units through implementation-level planning. Permits for over these group sizes could be approved by the authorized officer.
										• *ROWs and renewable energy:* Open to ROWs.
										KEPA ERMA (805,907 acres)
										• *Competitive events:* Allow competitive events.
										• *Campfires:* Encourage fire pans and allow collection of dead and down wood in areas where campfires are allowed.
										• *Group size:* Group size is limited to 50 within ERMAs. More restrictive group size limits could be established within WSAs or areas adjacent to NPS units through implementation-level planning. Permits for over these group sizes could be approved by the authorized officer.
										• *Leasable minerals:* Apply Controlled Surface Use and Timing Limitation Stipulation for mineral leasing (refer to Appendix H [*Stipulations and Exceptions, Modifications, and Waivers*] for a description).
										• *Mineral materials:* Open to mineral material disposals.
										• *ROWs and renewable energy:* Open to ROWs.

2.3.15 Travel and Transportation Management

Travel and Transportation Management (TA)									
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal TA:1 Establish a transportation system that contributes to protection of sensitive resources (such as wildlife habitat, riparian areas, and cultural resources), accommodates a variety of uses, and minimizes user conflicts. **Objectives:** **TA:1.1** Establish OHV management areas that guide the establishment of a transportation system that provides access to public land resources, provides connectivity to other lands and communities, and provides for experiences compatible with the BLM's multiple-use mission. **TA:1.2** Sustain compatible traditional, current, and future use of the land by establishing a route system that contributes to protection of sensitive resources, accommodates a variety of uses, and minimizes user conflicts. **TA:1.3** Consider public access, resource management, and regulatory needs through transportation planning, incorporating consideration of access needs and the effects of and interaction among all forms of travel, including OHV, mechanized, and non-motorized/mechanized travel. **TA:1.4** Coordinate OHV management with local counties, adjacent field offices, and other agencies. **TA:1.5** Provide opportunities for OHV use on public lands.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
2105		X	X	X	X	In the event that Title 5 ROWs are issued or in the event of legal decisions on RS 2477 assertions, routes will be governed under the terms of these actions[5]				
2106		X	X	X	X	Any land acquired by the BLM over the life of the RMPs will be managed similarly to the existing OHV area designations of adjoining BLM lands or as stated, or implied, in the transfer. Where clarification is absent, the BLM will manage acquired lands under the OHV limited area designation. The type of limitation will be set by implementation-level decisions; until these decisions are made, use may continue in the same manner and degree consistent with the purposes for which the acquisition was made.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
2107	TA:1.2	X	X	X		Limit use of bicycles to designated routes and prohibit cross-country travel.	Limit mechanized travel and equipment to routes designated specifically for such use and routes where OHV use is allowed.			
2108	TA:1.2	X	X	X	X	Base the specific routes shown open for public use on a variety of considerations, including what is needed to protect monument resources, implement the planning decisions, and provide for the transportation needs of surrounding communities. The basic philosophy in determining which routes will be open was to determine which routes access some destination (e.g., scenic overlook, popular camping site, heavily used thoroughfare) and present no significant threat to monument resources. Keep these routes open for public use. Close routes that were not considered necessary or desirable (for resource protection purposes) to OHV and mechanized public access.	Until future travel management planning is complete, consistent with OHV area designations made through this planning process, allow OHV vehicle use on routes identified in the GSENM MMP (BLM 2000), unless otherwise specifically addressed in this EIS. While the GSENM MMP identified a route system for the monument, route designation is an implementation-level decision that the BLM undertakes in a separate NEPA process. Future TMP Considerations: During the future travel management planning process, consider designation of OHV vehicle use and mechanical transport on primitive routes and ways that existed during the original wilderness inventory and were available for use immediately before the issuance of Presidential Proclamation 6920. The BLM will inventory linear transportation features in WSAs and compare them to the original wilderness inventory to determine whether any "new," unauthorized routes are present. Any routes that were not present during the original inventory must be designated "OHV closed" (except in instances related to provision of access to valid existing rights, and limited to the right holder [not available for public use]; see Manual 6330).			
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
						Travel Management				

2109	TA:1	X	X	X	X	No similar action.	Delineate the Planning Area into the following TMAs, with TMPs being developed in the following priority order:
							1. KEPA in Garfield County
							• Hole-in-the-Rock Road
							• Circle Cliffs
								Same as Alternative B.	Same as Alternative B.	Delineate the Planning Area into the following TMA:
										• KEPA in Garfield County
										  • Hole-in-the-Rock Road
										  • Circle Cliffs
										• KEPA in Kane County

[5]The State of Utah and counties may hold valid existing rights-of-way in the planning area pursuant to Revised Statute (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 the Federal Lands Policy and Management Act of 1976. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's land use planning process. These RMPs are founded on an independently determined purpose and need that is based on resource uses and associated access to public lands and waters. These RMPs are not intended to provide any evidence bearing on or addressing the validity of any R.S. 2477 assertions and do not adjudicate, analyze, or otherwise determine the validity of claimed rights-of-way. Nothing in these plans extinguishes any valid right-of-way, or alters in any way the legal rights the State and counties have to assert and protect R.S. 2477 rights or to challenge in Federal court or other appropriate venue any use restrictions imposed by the plans that they believe are inconsistent with their rights. At such time as an administrative determination acknowledges a right-of-way or a binding judicial decision confirms a right-of-way, the BLM will adjust its travel management plan accordingly if necessary.

Travel and Transportation Management (TA)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							2. KEPA in Kane County 3. Grand Staircase 4. Kaiparowits 5. Escalante Canyons The size and prioritization of these TMAs may change due to changes in public interest and resource conflicts. Routes in the TMAs may be analyzed and approved separately. Adjustments to TMA boundaries may be made prior to conducting implementation travel planning.			• Grand Staircase • Kaiparowits • Escalante Canyons Adjustments to TMA boundaries may be made prior to conducting implementation travel planning.
2110	TA:1.2 TA:1.3 TA:1.4 TA:1.5	X	X	X		The transportation map (Map 79) shows routes that will be open for public use and those available for administrative use only (see the Administrative Routes and Authorized Users section for related decisions). Any route not shown on Map 79 is considered closed upon approval of this plan, subject to valid existing rights. In the event that Title 5 ROWs are issued or in the event of legal decisions on RS 2477 assertions, routes will be governed under the terms of these actions.	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, allow OHV use in accordance with the existing GSENM TMP (BLM 2000). During implementation of travel planning, consider: • Protection of monument objects and values in the determination of which routes to designate, develop, or close • Designation of non-mechanized trails	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, allow OHV use in accordance with the existing GSENM TMP (BLM 2000), with the following exceptions: • Open all designated routes to OHVs During implementation of travel planning, consider: • Protection of monument objects and values in the determination of which routes to designate, or close • Designation of routes consistent with Garfield and Kane Counties' motorized route system • Allowing motorized and mechanized vehicle use on roads and trails designated for such use immediately before the issuance of Presidential Proclamation 6920 (Presidential Proclamation 9682) • Designating non-mechanized trails	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, allow OHV use in accordance with the existing GSENM TMP (BLM 2000), with the following exceptions: • All designated routes will be open to OHVs. • The following routes will be added to the existing GSENM TMP, consistent with the route evaluations (Appendix K)[6] (Map 82): ○ The V-Road ○ Inchworm Arch Road (Map 82) ○ Flagpoint Road (off 562) During implementation of travel planning, consider: • Protection of monument objects and values in the determination of which routes to designate, or close • Designation of routes consistent with Garfield and Kane Counties' motorized route system • Allowing motorized and mechanized vehicle use on roads and trails designated for such use immediately before the issuance of Presidential Proclamation 6920 (Presidential Proclamation 9682) • Designating non-mechanized trails	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, manage OHV use in accordance with the existing GSENM TMP (BLM 2000), with the following exceptions: • All routes designated as "open to motorized use" will be open to OHVs, consistent with State law. • The following routes will be added to the existing GSENM TMP, consistent with the route evaluations (Appendix K)[6] (Map 83): ○ The V-Road ○ Inchworm Arch Road, proposed alternate route (Map 83) During implementation of travel planning, consider: • Protection of monument objects and values in the determination of which routes to designate, or close • Designation of routes consistent with Garfield and Kane Counties' motorized route system • Allowing motorized and mechanized vehicle use on roads and trails designated for such use immediately before the issuance of Presidential Proclamation 6920 (Presidential Proclamation 9682) • Designating non-mechanized trails
2111	TA:1.1 TA:1.2 TA:1.3 TA:1.4 TA:1.5				X	The transportation map (Map 79) shows routes that will be open for public use and those available for administrative use only (see the Administrative Routes and Authorized Users section for related decisions). Any route not shown on Map 79 is considered closed upon approval of this plan, subject to valid existing rights. In the event that Title 5 ROWs are issued or in the event of legal decisions on RS 2477 assertions, routes will be governed under the terms of these actions.	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, allow OHV vehicle use on routes identified in the GSENM TMP. During implementation of travel planning, consider: • Designation of non-mechanized trails • Designation of new OHV and mechanical transportation routes in accordance with 43 CFR 8342.1 and other applicable law	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, allow OHV vehicle use on routes identified in the GSENM TMP, with the following exceptions: • Open all designated routes to OHVs During implementation of travel planning, consider: • Designation of non-mechanized trails • Designation of routes consistent with Garfield and Kane Counties' motorized route system	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, allow OHV vehicle use on routes identified in the existing GSENM TMP, with the following exceptions: • All designated routes will be open to OHVs. During implementation of travel planning, consider: • Designation of non-mechanized trails • Designation of routes consistent with Garfield and Kane Counties' motorized route system	Defer implementation of travel planning to a future TMP. Until travel planning is completed, consistent with OHV area designations made through this planning process, allow OHV vehicle use on routes identified in the existing GSENM TMP, with the following exceptions: • All designated routes will be open to OHVs. During implementation of travel planning, consider: • Designation of non-mechanized trails • Designation of routes consistent with Garfield and Kane Counties' motorized route system

[6] The roads listed are implementation-level decisions. Therefore, they cannot be protested per planning regulations, but they can be appealed once the Record of Decision is signed (43 CFR Part 4.411).

Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Travel and Transportation Management (TA)										
								• Allowing motorized and non-mechanized vehicle use on roads and trails designated for such use immediately before the issuance of Presidential Proclamation 6920 and maintain roads and trails for such use (Presidential Proclamation 9682) • Designation of new OHV and mechanical transportation routes in accordance with 43 CFR 8342.1 and other applicable law	• Allowing motorized and non-mechanized vehicle use on roads and trails designated for such use immediately before the issuance of Presidential Proclamation 6920 and maintain roads and trails for such use (Presidential Proclamation 9682) • Designation of new OHV and mechanical transportation routes in accordance with 43 CFR 8342.1 and other applicable law	• Allowing motorized and non-mechanized vehicle use on roads and trails designated for such use immediately before the issuance of Presidential Proclamation 6920 and maintain roads and trails for such use (Presidential Proclamation 9682) • Designation of new OHV and mechanical transportation routes in accordance with 43 CFR 8342.1 and other applicable law
						OHV Area Designations				
2112	TA:1.1 TA:1.2 TA:1.3 TA:1.4 TA:1.5	X	X	X	X	Cross-country motorized travel will be prohibited in accordance with 43 CFR 8340 OHV regulations. Use on designated routes is allowed. OHV designations will be either "closed" (in the Primitive Zone) or "limited to designated routes" (in the Frontcountry, Passage, and Outback Zones) (Map 79). These designations are consistent with standard BLM designations provided for in BLM Manual 8340. Vehicles may pull off routes no more than 50 feet for parking and camping in the Outback Zone, except where prohibited (see the Camping and Forestry Products section for related decisions). No OHV play areas will be designated in the Monument. • Open: 0 acres • Limited: 655,408 acres • Closed: 1,210,137 acres	Limit OHV use to designated routes with the exception of those closed to meet other resource values. No Man's Mesa RNA is closed. (Map 80). • Open: 0 acres • Limited: 448,955 acres • Closed: 1,417,124 acres	Same as Alternative B except (Map 81): • Open: 116 acres (located in KEPA). • Limited: 1,801,163 acres • Closed: 64,801 acres	Same as Alternative B except (Map 82): • Open: 2,528 acres (located in KEPA). • Limited: 1,863,552 acres • Closed: 0 acres	Limit OHV use to designated routes with the exception of the 116-acre open area in the Little Desert RMZ and the 1,464-acre closed area in the No Man's Mesa RMZ (Map 83). • Open: 116 acres (located in KEPA) • Limited: 1,864,500 acres • Closed: 1,464 acres
2113	TA:1.1	X	X	X	X	Allow development and maintenance of trails per zone system.	Allow development and maintenance of trails for public safety and protection of resources, or to provide opportunities for visitors.	Same as Alternative B.	Same as Alternative B.	Allow development and maintenance of trails for public safety and protection of resources, or to provide opportunities for visitors.
2114	TA:1.1	X	X	X	X	With the exception of those segments listed below, maintain open routes within the disturbed travel surface area as of the date of this plan; prohibit widening, passing lanes, or other travel surface upgrades. Allow deviations from the current maintenance levels as follows: • Hole-in-the-Rock Road: Allow stabilization of washout-prone areas, primarily along the southeastern end, to prevent erosion and sediment loading in drainages. • Smoky Mountain Road: Allow stabilization in the Alvey Wash section to prevent erosion and sediment loading in drainages. • Cottonwood Wash Road: Allow stabilization of washout-prone areas, primarily along the southern section, to prevent erosion and sediment loading in drainages. • Skutumpah Road: Allow new crossing for safety at Bull Valley Gorge, and stabilization of washout-prone areas, primarily along the northern section, to prevent erosion and sediment loading in drainages.	Repair, maintain, rehabilitate, and improve routes in accordance with the existing GSENM TMP (BLM 2000), until new TMPs are completed.	Same as Alternative B.	Same as Alternative B.	Repair, maintain, rehabilitate, and improve routes in accordance with the existing GSENM TMP (BLM 2000), until new TMPs are completed.

2.3.16 Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACEC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal ACEC:1 Maintain, protect, and enhance the relevance and importance values for each ACEC and provide opportunities for other compatible uses where appropriate.				
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
3001	N/A	X	X	X		No ACECs are designated in GSENM because the protections provided by the national monument designation are adequate to protect the values identified and no special management is required.				
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
3002	ACEC:1				X	No similar action.	Manage all nominated ACECs found to meet relevance and importance values (309,044 acres, Map 84): including: • Alvey Wash (29,935 acres) • Bulldog Bench (361 acres) • Butler Valley (15,780 acres) • Circle Cliffs (26,706 acres) • Cockscomb East (42,100 acres) • Cockscomb West (40,475 acres) • Collet Top (9,218 acres) • Henderson/Pardner (12,259 acres) • Hole-in-the-Rock Trail (60,772 acres) • Paria River (180 acres) • Scorpion Flat/Dry Fork (30,691 acres) • Straight Cliffs/Fiftymile Bench (21,357 acres) • Tibbet Head (19,079 acres) • Wahweap Hoodoos (130 acres) Special management for each ACEC is included in Appendix S.	Manage the following areas as ACECs (130,995 acres, Map 85): • Circle Cliffs (26,706 acres) • Cockscomb East (32,683 acres) • Cockscomb West (40,462 acres) • Straight Cliffs/Fiftymile Bench (12,270 acres) • Tibbet Head (18,874 acres) Special management for each ACEC is included in Appendix S.	Do not manage any areas as ACECs.	Do not manage any areas as ACECs.

2.3.17 National Historic Trails

National Historic Trails (NHT)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal NHT:1 Promote the preservation and appreciation of the OSNHT for the enjoyment of the American people. **Objectives:** **NHT:1.1** Identify and manage an appropriate trail management corridor for the OSNHT. **NHT:1.2** Manage the landscape (viewshed) associated with the OSNHT so that visitors continue to get a sense of how this landscape influenced commercial trade along the trails. **NHT:1.3** Provide appropriate interpretation and signage for the OSNHT to improve visitor experiences.				
MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES										
3003	NHT:1.2 NHT:1.3		X	X	X	No similar action.	Prepare an Activity Plan for the OSNHT to identify specific uses and management actions that would be taken to implement the goals and objectives of the trail.			
3004	NHT:1.3		X	X	X	No similar action.	Develop interpretive signs or other features to increase access to trail, recognize trail location, and help guide users.			

Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
National Historic Trails (NHT)										
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
Old Spanish National Historic Trail										
3005	NHT:1.1 NHT:1.2		X	X	X	No similar action.	Manage High-Potential Sites and Segments of the OSNHT as VRM Class II except in designated utility corridors.	Same as Alternative B.	Same as Alternative B.	No similar action.
3006	NHT:1.1		X	X	X	No similar action.	Establish an OSNHT NTMC to include lands up to 3 miles on either side of the OSNHT centerline or within the viewshed, whichever is less (76,247 acres, Map 86). Manage the OSNHT NTMC as follows: • Prohibit new surface-disturbing activities in the OSNHT NTMC, except in designated utility corridors. • KEPA: Allow mineral leasing subject to No Surface Occupancy stipulation. • Apply ROW exclusion area (including communication sites). Allow new crossings only in designated utility corridors. Allow discretionary uses that would be compatible with the protection of the purpose and nature, resources, qualities, values, and settings of the OSNHT.	Establish an OSNHT NTMC to include lands up to 0.5 mile on either side of the OSNHT centerline or within the viewshed, whichever is less (21,238 acres, Map 86). Manage the OSNHT NTMC as follows: • Allow new surface-disturbing activities in the OSNHT NTMC with the following restrictions: ○ Authorize highly visible projects and/or projects out of scale with the surrounding environment (e.g., large wind-energy development projects, gas plants, power plants, high-voltage transmission lines) only if the project causes no more than a weak contrast, as defined in the BLM Visual Resource Manual. ○ Prohibit new audible and atmospheric effects from exceeding current levels existing along the NHT corridors. • KEPA: Allow mineral leasing subject to No Surface Occupancy stipulation unless the proposed project and its associated impacts are not visible from the NHT. • Apply ROW avoidance area, except in designated utility corridors. Allow discretionary uses that would be compatible with the protection of the purpose and nature, resources, qualities, values, and settings of the OSNHT.	Establish an OSNHT NTMC, along the Box of the Paria High-Potential Segment, to include lands up to 300 feet on either side of the OSNHT centerline or within the viewshed, whichever is less (1,863 acres, Map 86). Manage the designated OSNHT NTMC as follows: • KEPA: Allow mineral leasing subject to Controlled Surface Use stipulation. Manage High-Potential Sites and Segments per the National Trails System Act as follows: • Allow discretionary uses that would be compatible with the protection of the purpose and nature, resources, qualities, values, and settings of the OSNHT. • Prohibit new audible and atmospheric effects from exceeding current levels existing within the OSNHT NTMC.	Establish an OSNHT NTMC, along the Box of the Paria High-Potential Segment, to include lands up to 0.5 mile on either side of the OSNHT centerline or within the viewshed, whichever is less (14,201 acres, Map 86). Manage the designated OSNHT NTMC as follows: • KEPA: Allow mineral leasing subject to Controlled Surface Use stipulation. Manage High-Potential Sites and Segments per the National Trails System Act as follows: • Allow discretionary uses that would be compatible with the protection of the purpose and nature, resources, qualities, values, and settings of the OSNHT.

2.3.18 Scenic Routes

Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Scenic Routes (SCE)				
						Goal SCE:1 Manage designated scenic routes to protect values for which they were established. **Objectives:** **SCE:1.1** Continue to coordinate management of National Scenic Byways, Utah Scenic Byways, and Utah Scenic Backways with other agencies, BLM offices, and local and State governments as appropriate. **Goal SCE:2** Identify appropriate scenic routes to be designated as Scenic or Backcountry Byways in coordination with the State of Utah and other agencies and stakeholders. **Objectives:** **SCE:2.1** Consider currently designated State Scenic Byways as Scenic or Backcountry Byways.			

Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Scenic Routes (SCE)				
						MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES				
3007	SCE:1.2	X	X	X	X	Manage National Scenic Byways, Utah Scenic Byways, and Utah Scenic Backways in cooperation with other agencies, BLM offices, and local and State governments as appropriate.				
						MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE				
3008	SCE:1.1	X	X	X	X	No similar action.	Seek BLM Backcountry Byway designation for routes currently designated as State Scenic Backways as follows (Map 87). Determine byway types during future travel management planning. • Burr Trail • Hole-in-the-Rock • Smoky Mountain • Cottonwood Road • Paria River Valley • Johnson Canyon/Alton If designated, develop Corridor Management and Interpretive Master Plans for BLM Backcountry Byways.	Same as Alternative B.	Do not consider new BLM Backcountry Byways.	Do not consider new BLM Backcountry Byways.
3009	SCE:1	X	X		X	No similar action.	Manage corridors along designated scenic byways and backways extending either for 3 miles or within the viewshed on either side of the centerline, whichever is less, as VRM Class II.	Manage corridors along designated scenic byways and backways extending either for 1 mile or within the viewshed on either side of the centerline, whichever is less, as VRM Class II.	No similar action.	No similar action.

2.3.19 Wild and Scenic Rivers

Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Wild and Scenic Rivers (WSR)				
						Goal WSR:1 Preserve suitable rivers, or segments of rivers, and their immediate environments in their free-flowing condition for the protection of their ORVs and for the benefit and enjoyment of present and future generations, giving consideration to other resource values and uses.				
						MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES				
3010	WSR:1	X	X	X	X	Approximately 234.2 miles of river segments have been determined eligible and suitable and recommended for Congressional designation into the National Wild and Scenic River System. The suitable river segments include: Escalante River 1, 2, 3; Harris Wash; Lower Boulder Creek; Slickrock Canyon; Lower Deer Creek 1, 2; The Gulch 1, 2, 3; Steep Creek; Lower Sand Creek and tributary Willow Patch Creek; Mamie Creek and west tributary; Death Hollow Creek; Calf Creek 1, 2, 3; Twentyfivemile Wash; Upper Paria River 1, 2; Lower Paria River 1, 2; Deer Creek Canyon; Snake Creek; Hogeye Creek; Kitchen Canyon; Starlight Canyon; Lower Sheep Creek; Hackberry Creek; and Lower Cottonwood Creek (Maps 88 through 91).				
3011	WSR:1	X	X	X	X	Manage suitable segments for their free-flowing condition, identified tentative classification, and preservation of ORVs.				
3012	WSR:1	X	X	X	X	Manage eligible river segments that are not determined to be suitable under the direction and prescriptions of other resources and resource uses in this plan. Designate no special protection or consideration specifically for the free-flowing condition, ORVs, and tentative classifications of these river segments.				
						MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE				
3013	WSR:1		X	X	X	Retain the existing tentative classification for all suitable segments (Map 88).	Same as Alternative A (Map 89).	Tentatively classify the Upper Paria 1 and Lower Sheep Creek segments (23.2 miles) as scenic. Retain the existing tentative classification for all other suitable segments (Map 90).	Tentatively classify the Upper Paria 1 and Lower Sheep Creek segments (23.2 miles) as recreational. Retain the existing tentative classification for all other suitable segments (Map 91).	Tentatively classify the Upper Paria 1 and Lower Sheep Creek segments (23.2 miles) as recreational. Retain the existing tentative classification for all other suitable segments (Map 91).

Wild and Scenic Rivers (WSR)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
3014	WSR:1	X	X	X	X	The 2000 MMP manages suitable segments for preservation of ORVs.	Manage all suitable segments as follows: • WSR suitable segments with scenic ORVs and a tentative wild classification as VRM Class I. • Manage WSR suitable segments with scenic ORVs and a tentative classification of recreational or scenic as VRM Class II. • Exclude ROWs (including communication sites) in all suitable WSR corridors, except in designated utility corridors. • KEPA: Recommend withdrawal of all suitable WSR river corridors from mineral entry • KEPA: Close all suitable WSR corridors to mineral leasing. • KEPA: Close suitable wild or scenic river corridors to mineral material disposals. • Close WSR wild sections to OHV and mechanized vehicles. • WSR corridors within WSAs will be managed as VRM Class I.	Manage Upper Paria 1 and Lower Sheep Creek segments (both scenic), and all other suitable segments as follows: • Manage WSR suitable segments with scenic ORVs as VRM Class II. • Exclude ROWs (including communication sites) in suitable WSR corridors with a tentative classification of wild or scenic, except in designated utility corridors. • Avoid ROWs (including communication sites) in all suitable WSR corridors with a tentative classified as recreational, except in designated utility corridors. • KEPA: Recommend withdrawal of suitable WSR river corridors with a tentative classification of wild or scenic from mineral entry. • KEPA: Close all suitable WSR corridors tentatively classified as wild or scenic to mineral leasing. • KEPA: Open suitable WSR corridors tentatively classified as recreational to mineral leasing with a No Surface Occupancy stipulation. • KEPA: Close suitable wild or scenic river corridors to mineral material disposals. • Close WSR wild sections to OHV and mechanized vehicles. • WSR corridors within WSAs will be managed as VRM Class I.	Manage Upper Paria 1 and Lower Sheep Creek segments (both recreational), and all other suitable segments as follows: • Avoid ROWs (including communication sites) in all suitable WSR corridors, except in designated utility corridors. • KEPA: Open all suitable WSR corridors to mineral leasing with a No Surface Occupancy stipulation. • KEPA: Close suitable wild or scenic river corridors to mineral material disposals. • WSR corridors within WSAs will be managed as VRM Class I.	Manage Upper Paria 1 and Lower Sheep Creek segments (both recreational), and all other suitable segments as follows: • Avoid ROWs (including communication sites) in all suitable WSR corridors, except in designated utility corridors. • KEPA: Open all suitable WSR corridors to mineral leasing with a No Surface Occupancy stipulation. • KEPA: Close suitable wild or scenic river corridors to mineral material disposals. • WSR corridors within WSAs will be managed as VRM Class I.

2.3.20 Wilderness Study Areas

Wilderness Study Areas (WSA)										
Record #	Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							Goal WSA:1 Manage WSAs and ISAs in a manner that does not impact or impair their suitability for designation as wilderness.				
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES											
3015	3015	WSA:1	X	X	X	X	Manage all WSAs and ISAs (Map 92) under VRM Class I objectives to support current policy and guidelines to retain a natural landscape. Exceptions: (1) case-by-case exceptions for valid existing rights and grandfathered uses; (2) if the WSA is released by Congress, the area may need to be amended and appropriate VRM objectives established.				
3016	3016	WSA:1	X	X	X	X	Manage WSAs and ISAs as ROW exclusion areas, closed to mineral leasing, and closed to mineral material disposals.				
3017	3017	WSA:1	X	X	X	X	Should any WSA or ISAs, in whole or in part, be released from wilderness consideration, manage such released lands in accordance with the goals, objectives, and management prescriptions established in this RMP, unless otherwise specified by Congress in its releasing legislation. Examine proposals in the released areas on a case-by-case basis but defer all actions that are inconsistent with RMP goals, objectives, and prescriptions until a land use plan amendment is completed.				
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE											
3018	3018	WSA:1	X	X	X	X	The 2000 MMP identified prescriptions for management zones. Generally include WSAs in the "Primitive" zone or portions of certain WSAs in the "Outback" zone. Close the Primitive zone	Manage all WSAs and ISAs as OHV closed areas. Ensure that routes do not exceed the approximate conditions of impact on the	Manage 15 WSAs and ISAs (881,159 acres) as OHV limited areas. Manage Steep Creek (22,046 acres) as an OHV closed area. During the travel management planning process, consider designation of OHV use and	Manage all WSAs and ISAs as OHV limited areas. During the travel management planning process, consider designation of OHV use and mechanical transport in WSAs and ISAs on	Manage all WSAs and ISAs as OHV limited areas. During the travel management planning process, consider designation of OHV use and mechanical transport in WSAs and ISAs on

Wilderness Study Areas (WSA)											
Record #	Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
							to OHV use and limit the Outback zone to designated routes.	wilderness characteristics that existed on October 21, 1976 (BLM Manual 6330).	mechanical transport in WSAs and ISAs on primitive routes and ways that existed during the original wilderness inventory and that were available for OHV use immediately before the issuance of Presidential Proclamation 6920, consistent with the requirements of BLM Manual 6330—Management of BLM Wilderness Study Areas. Ensure that routes do not exceed the approximate conditions of impact on the wilderness characteristics that existed on October 21, 1976 (BLM Manual 6330).	primitive routes and ways that existed during the original wilderness inventory and that were available for OHV use immediately before the issuance of Presidential Proclamation 6920, consistent with the requirements of BLM Manual 6330—Management of BLM Wilderness Study Areas. Ensure that routes do not exceed the approximate conditions of impact on the wilderness characteristics that existed on October 21, 1976 (BLM Manual 6330).	primitive routes and ways that existed during the original wilderness inventory and that were available for OHV use immediately before the issuance of Presidential Proclamation 6920, consistent with the requirements of BLM Manual 6330—Management of BLM Wilderness Study Areas. Ensure that routes do not exceed the approximate conditions of impact on the wilderness characteristics that existed on October 21, 1976 (BLM Manual 6330).
3019	3019	WSA:1	X	X	X	X	No specific management action for WSAs and ISAs. RM-2: Allow the use of machinery (e.g., roller chopping, chaining, plowing, discing) in all zones except the Primitive Zone. Chaining has been used in the past to remove pinyon and juniper prior to reseeding with perennial grasses. Due to the potential for irreversible impacts on other monument resources, such as archaeological sites and artifacts, and paleontological resources, prohibit this treatment method to remove pinyon and juniper. Allow covering rehabilitation seed mixes with soil after wildfires only where: • Noxious weeds and invasive nonnative species are presenting a significant threat to monument resources or watershed damage could occur if the burned area is not reseeded • It can be demonstrated that monument resources will not be detrimentally affected (i.e., completion of full archaeological, paleontological, threatened and endangered species, and other resource clearance and consultation) • It is determined that seed cover is necessary for the growth of the native species proposed for seeding • Other, less surface-disturbing measures of covering seed are not available or cannot be applied in a timely manner	Prohibit all vegetation treatments in WSAs and ISAs, except where necessary to restore human impacts or to restore vegetation to characteristic conditions of the ecological zone. Under these two exceptions, allow manipulation only when restoration by natural forces is no longer attainable, and only to restore or maintain vegetative communities to the closest approximation of the natural range of conditions.	Allow manipulation of vegetation through prescribed fire, chemical application, mechanical treatment, or human-controlled biological means only where it meets the non-impairment standard or one of the exceptions. If vegetative manipulation was allowed under the grazing or other authorization that was in effect in 1976, maintain the vegetative treatment by reapplying the same or similar treatment as long as it does not create greater impacts and achieves the same objective. Use only native plants.	Consistent with Federal policy, prioritize the use of native species. Allow use of nonnative species consistent with applicable BLM WSA policy.	Allow vegetation treatments consistent with applicable BLM WSA policy. Consistent with Federal policy, prioritize the use of native species. Allow use of nonnative species consistent with applicable BLM WSA policy.

2.3.21 Social and Economic Considerations

Social and Economic Considerations (SOC)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						Goal SOC:1 Provide sustainable economic development opportunities for a diversity of resources. **Objectives:** **SOC:1.1** Coordinate and cooperate with local governments to consider local and regional economic development and land use plans and impacts in BLM decisionmaking. **SOC:1.2** Provide opportunities for the public to view and understand local customs and culture of resources and communities in the area. **SOC:1:3** Coordinate and cooperate with local communities and governments to recognize the importance of custom and culture during activity and implementation-level decisions. **Goal SOC:2** Reduce hazards to public health and safety. **Objectives:** **SOC:2.1** Ensure that human health and safety concerns on public lands remain a major priority. **SOC:2.2** Minimize or mitigate hazardous or potentially hazardous sites and situations, including hazardous materials, hazardous or solid wastes, abandoned mine sites, abandoned well sites, and other potential hazards on public lands. **SOC:2.3** Minimize the potential for intentional or accidental releases of hazardous materials or wastes and solid wastes onto public lands.				
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
Custom and Culture										
4001	SOC:1	X	X	X	X	Establish continuing collaborative programs with local communities, organizations, local and State agencies, Native American Indian communities, outfitters and guides, volunteers, and other interested parties. Use the information collected to create a better understanding of cultures and communities and work to showcase the histories of the local communities as part of the "long and dignified history" of the monument.	Same as Alternative A.	Same as Alternative A, and also support the development of a museum with local stakeholders. The museum would serve as a science and educational center for use by visitors and the local community.	Same as Alternative C.	Establish continuing collaborative programs with local communities, organizations, local and State agencies, Native American Indian communities, outfitters and guides, volunteers, and other interested parties. Use the information collected to create a better understanding of cultures and communities and work to showcase the histories of the local communities as part of the "long and dignified history" of the monument (same as Alternative A), and also support the development of a museum with local stakeholders. The museum would serve as a science and educational center for use by visitors and the local community.

2.3.22 Science and Monument Advisory Committee

Science and Monument Advisory Committee (SM)										
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
						GSENM Goal SM:1 Provide opportunities for science and research on GSENM and establish the Monument Advisory Committee in accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682. **Objectives**: **SM:1.1** Focus monument management priorities and budgets on a comprehensive understanding of the resources of GSENM while assisting in the development of improved and innovative land management, ecological restoration, and vegetation management activities. Emphasize natural, physical, and social sciences in monument pure and applied research activities. Encourage research projects to have a multi-scale and interdisciplinary approach. **SM:1.2** Encourage and support educational programs for grades Kindergarten through 12, emphasizing the area's natural, physical, and cultural resources. **SM:1.3** Work with livestock permittees to research innovative grazing techniques to improve rangeland and vegetative health.				
MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES										
4002	SM:1:1 SM:1.2	X	X	X		Facilitate appropriate research of resources identified in the Presidential Proclamation 6920 as modified by Presidential Proclamation 9682 and Monument Science Plan so that GSENM is recognized as an outdoor classroom and laboratory.				
4003	SM:1:1 SM:1.2	X	X	X		Request researchers to incorporate a public outreach/education component into projects. Allow educators and students the opportunity to participate in research activities where appropriate. Use outreach efforts to showcase results of scientific research and inventory data by dissemination to the public through interpretive displays, publications, forums, presentations, and public exhibition of objects and artifacts. Help facilitate the transfer of research information to the public through periodic science forums, monument-sponsored publications, interpretive displays, and the Southern Utah University digital library.				

						Science and Monument Advisory Committee (SM)				
Record #	OBJ	EC	KP	GS	KE	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
4004	SM:1:1 SM:1.2 SR:1.3	X	X	X		Prioritize in-house and partner-driven pure research and applied research in order to create a catalog of natural, cultural, and sociological knowledge, as well as the ability to effectively manage all of monument values and objects within an adaptive management framework. Prioritize inventory and pure research on objects and values in danger of being lost over short time frames (hundreds of years or less) over those that are more stable in the long term.				
4005	SM:1:1 SM:1.2	X	X	X		Cooperate with colleges and universities in undergraduate and graduate programs as resources permit. Conduct outreach efforts such as monument-sponsored science publications and fund field schools to the extent possible.				
4006	SM:1:1 SM:1.2	X	X	X		In addition to normal avenues for research publications (e.g., scientific journals, symposia proceedings, etc.), help facilitate the transfer of research information to the public by way of a monument-sponsored multi-day interdisciplinary science symposium on a decadal rotation.				
4007	SM:1:1 SM:1.2	X	X	X		Require a science permit application for internal and external research projects on GSENM. The application will be reviewed by an interdisciplinary team and approved or denied by an authorized officer. Require appropriate collection permits or licenses.				
4008	SM:1:1 SM:1.2 SM:1.3	X	X	X		Improve the understanding of the processes and mechanisms that affect soil organic carbon dynamics on arid rangelands as a means of sequestering atmospheric carbon dioxide, coupled with implementing management actions and technologies focused on rangelands soils to accumulate and conserve carbon.				
4009	SM:1.1	X	X	X		A Grand Staircase-Escalante National Monument Advisory Committee (MAC) (chartered under the Federal Advisory Committee Act) will be established to advise monument managers as per the MAC Charter.				
MANAGEMENT ACTIONS & ALLOWABLE USES BY ALTERNATIVE										
4010	SM:1:1	X	X	X	X	No similar action.	Coordinate and cooperate with local communities and within existing infrastructure and develop an active (hands-on) science learning center.	Coordinate and cooperate with local communities and augment existing infrastructure to include a small dormitory and develop an active (hands-on) science learning center.	Coordinate and cooperate with local communities to develop a new facility for an active science learning center.	Coordinate and cooperate with local communities to develop a new museum for an active science and education center.
4011	SM:1:1 SM:1.2	X	X	X		No similar action.	Use the Monument Science Program to support and emphasize research focused on how global climate variability affects the need to apply adaptive management actions across all resources.	Develop and implement a portfolio approach to land use planning that allows for diverse strategies and adaptive, dynamic planning as climate change adaptation strategy. This involves establishing and setting aside restoration, innovation (experimental) and observation (control) areas in GSENM in order to "learn while doing."	No similar action.	No similar action.

Note: Geospatial data boundaries may have overlaps and gaps where features should align and share a boundary. As a result, there may be a margin of error associated with geographic information system–derived allocation and constraint acreages reported in the alternatives.
ACEC – Area of Critical Environmental Concern, AIM – Assessment, Inventory, and Monitoring, ASFO – Arizona Strip Field Office, AUM – animal unit month, bhp-hr – brake horsepower-hour, BLM – Bureau of Land Management, BMP – best management practice, CEQ – Council on Environmental Quality, CFR – Code of Federal Regulations, CRMP – Cultural Resource Management Plan, DWFC – Desired Wildland Fire Condition, EC – Escalante Canyons, ERMA – Extensive Recreation Management Area, ESA – Endangered Species Act, FLPMA – Federal Land Policy and Management Act, FMP – Fire Management Plan, FRCC – Fire Regime Condition Class, GS – Grand Staircase, GSENM – Grand Staircase-Escalante National Monument, IM – Instruction Memorandum, ISA – Instant Study Area, KE – Kanab-Escalante, KEPA – Kanab-Escalante Planning Area, KFO – Kanab Field Office, KP – Kaiparowits Plateau, MFP – Management Framework Plan, MMP – Monument Management Plan, NEPA – National Environmental Policy Act, NHPA – National Historic Preservation Act, NHT – National Historic Trail, NO_X – nitrogen oxides, NPS – National Park Service, NRA – National Recreation Area, NRHP – National Register of Historic Places, NTMC – National Trail Management Corridor, OBJ – objective, OHV – off-highway vehicle, ORV – outstandingly remarkable value, OSNHT – Old Spanish National Historic Trail, PAC – protected activity center, PFYC – Potential Fossil Yield Classification, RMP – Resource Management Plan, RMZ – Recreation Management Zone, ROD – Record of Decision, ROW – right-of-way, SRMA – Special Recreation Management Area, SRP – Special Recreation Permit, TMA – Travel Management Area, TMP – Travel Management Plan, UDWR – Utah Division of Wildlife Resources, USFWS – U.S. Fish and Wildlife Service, VRI – Visual Resource Inventory, VRM – Visual Resource Management, WSA – Wilderness Study Area, WSR – Wild and Scenic River, WUI – Wildland-Urban Interface

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2.4 Alternatives Considered but not Analyzed in Detail

The BLM considered, but eliminated from detailed analysis, several alternatives. This section describes the alternatives that were considered and the rationale that the BLM used for eliminating them from further analysis.

2.4.1 No Grazing Alternative

Prior to Presidential Proclamation 9682, the BLM was working with Federal, State, and local agencies and stakeholders to prepare a GSENM Livestock Grazing Plan Amendment EIS. During the scoping process for that plan, the BLM received comments indicating that the agency should consider a no grazing alternative due to potential impacts on monument objects. In response to public comments, the BLM, in coordination with its cooperating agencies, developed a range of alternatives that included a no-grazing alternative. The BLM released preliminary alternatives for the Livestock Grazing Plan Amendment Draft EIS for public review in December 2014 and received comments both in support of and opposed to the elimination of grazing within the Planning Area. Completion of the Livestock Grazing Plan Amendment Draft EIS was placed on hold following issuance of Executive Order 13792, which mandated review of certain National Monument designations, including GSENM. The Livestock Grazing Plan Amendment Draft EIS, which has since been superseded by this planning process, was never published; however, the BLM has adopted three alternatives (C, D, and E) from the previous Livestock Grazing Plan Amendment Draft EIS as alternatives B, C, and D in this document. In developing the GSENM/KEPA Draft RMPs/EIS, the BLM determined that consideration of no-grazing alternative is no longer warranted or needed for the following reasons:

1. The BLM determined that existing resource conditions on BLM-administered surface land, including vegetation, watershed, and wildlife habitat, as reflected in land health assessments, do not warrant prohibiting livestock grazing on all public lands in the Planning Area, including BLM-administered allotments within Glen Canyon NRA. The condition of public lands in the majority of the Planning Area indicates that grazing can occur while maintaining soil/site stability, hydrologic function, and biotic integrity. In areas where rangeland health standards are not being met, historic and discontinued grazing practices and persistent drought have been identified as the causal factors.
2. The BLM has considered management actions that would reduce or eliminate conflicts between livestock grazing and monument objects in the lands that are retained in GSENM, and between livestock grazing and other resources or resource uses in KEPA and Glen Canyon NRA. In areas where there are unresolved conflicts, the BLM and NPS are considering making public lands unavailable for grazing. Under Alternative B, approximately 607,226 acres would be unavailable for grazing. This level of reduced grazing represents a "meaningful reduction" in grazing under one of the existing alternatives, consistent with BLM Instruction Memorandum 2012–169 (BLM 2012a).
3. Finally, in addition to analyzing an alternative that includes a substantial reduction in the number of acres available for livestock grazing, the BLM uses laws, regulations, and policies governing livestock grazing on public lands to consider making changes to management when new issues are identified and/or when conditions indicate that changes are necessary. Such determinations would be made when the BLM considers renewal of term grazing permits. Changes in permits would be based on several factors, including monitoring studies, review of current range management science, input from livestock operators and interested members of the public, and ability to meet rangeland health

standards. The amount of grazing that takes place each year on BLM-managed surface lands can also be adjusted in response to factors such as drought and wildfire.

Based on the factors described above, a no grazing alternative was eliminated from further detailed analysis.

2.4.2 Manage the Entirety of the Planning Area as a Special Recreation Management Area

The BLM considered an alternative that would manage the entire Planning Area as a single SRMA. The BLM determined that this alternative would generally be inconsistent with the BLM Land Use Planning Handbook (H-1601-1) and the BLM Recreation and Visitor Services Handbook (H-8320-1), which require SRMAs to be managed to protect and enhance a targeted set of activities, experiences, and benefits and focus on specific recreation opportunities and outcome-focused objectives in each SRMA. A single SRMA would not provide sufficient delineation and management for the range of objectives, experience, and activities across the Planning Area. As a result, the BLM eliminated this alternative from detailed analysis because it would be inconsistent with basic policy objectives and guidance.

2.4.3 Manage Wilderness Study Areas as Visual Resource Management Class II

BLM policy mandates that the Wilderness Study Areas (WSAs) should be managed as Visual Resource Management (VRM) Class I areas (Manual 6330). During alternatives development, the BLM received comments suggesting that WSAs in the Planning Area should be managed as VRM Class II areas instead of VRM Class I areas. The BLM determined that managing WSAs as VRM Class II areas would not result in any notable management differences, as the BLM is required to manage WSAs based on the non-impairment standard. As a result, the BLM eliminated this alternative from detailed analysis because it is contrary to agency policy, and the environmental consequences of the alternative would be substantially similar to other alternatives that are being analyzed.

2.4.4 Additional Open Off-Highway Vehicle Areas

The BLM considered an alternative that would include additional areas open to cross-country OHV use, such as Wahweap Creek and Smokey Mountain/Big Water. As part of the alternatives development process, the BLM considered OHV open areas in a variety of locations. However, the BLM determined that the majority of other areas recommended as open to OHV use have resource conflicts that make designation of an OHV open area incompatible with resource management and objectives for other resources. For example, managing the Wahweap Creek area as open to OHV use would conflict with management of the Paria Hackberry WSA and managing the Smokey Mountain/Big Water area as open to OHV use would conflict with the BLM, Glen Canyon NRA, and State management of sensitive soils in these areas. The BLM did carry forward the Little Desert recreation management zone as an OHV open area under some action alternatives.

2.4.5 Manage Herd Management Areas

The BLM considered an alternative that would manage the Harvey's Fear and Moody-Wagon Box Mesa Herd Areas as Herd Management Areas (HMAs). The BLM determined that the

genetic viability and generally small size of these herds do not support HMA designation or setting Appropriate Management Levels. As a result, the BLM eliminated this alternative from detailed analysis because it was not practical to implement and not consistent with guidance.

2.4.6 Alternatives Submitted during Scoping

During the scoping period, commenters submitted three full alternatives for BLM consideration:

- A "Sustainable Grand Staircase-Escalante Alternative," which mostly consisted of management from the existing GSENM Approved MMP and ROD (BLM 2000) with some revisions and the Sustainable Grazing Alternative that was submitted during the scoping process for the GSENM Grazing Management Plan in 2016.
- A complete alternative focusing on specific management components using management from the existing GSENM Approved MMP and ROD (BLM 2000) as an outline with proposed management specific to the excluded lands (i.e., KEPA lands).
- A "Conservation Alternative" that was originally submitted to the BLM in 2009 and primarily describes proposed changes in range management for allotments in the Planning Area to reduce livestock grazing and grazing conflicts.

While the BLM is not considering any of these alternatives in their entirety, the BLM has included many of the management recommendations from these alternatives in the range of alternatives that the BLM is analyzing in detail. Specifically, Alternative B was heavily influenced by scoping comments that suggested that the agency should consider management actions aimed at maximizing resource protection. Additionally, many of the suggested measures are carried forward into the RMPs/EIS under Alternative A (No Action Alternative).

The range of alternatives considered in this EIS covers the full spectrum of alternatives, including those that were put forward during scoping. The BLM did not carry forward these alternatives in their entirety because they would have effects that are substantially similar to other alternatives that are being analyzed.

2.4.7 Alternatives Considered but Eliminated as Part of the GSENM Grazing Management Plan

Prior to Presidential Proclamation 9682, the BLM was working with Federal, State, and local agencies and stakeholders to prepare a GSENM Grazing Management Plan. With modification of GSENM boundaries through Presidential Proclamation 9682, the grazing planning process was halted prior to a Draft RMP/EIS release. However, during the multi-year planning process, the BLM worked extensively with stakeholders to develop grazing management alternatives in the Grazing Management Plan. The BLM adopted three alternatives (C, D, and E) from the previous GSENM Grazing Management Plan as alternatives B, C, and D for these RMPs. As a result, the alternatives considered but eliminated from detailed analysis from the previous GSENM Grazing Management Plan effort are applicable to these RMPs/EIS and are summarized below.

2.4.7.1 Freeze Grazing Levels and Grazing Management Alternative

An alternative that would freeze grazing levels and grazing systems was suggested during the GSENM Grazing Management Plan alternatives development. Under this concept, grazing levels would be maintained at either the 1981 grazing levels identified in the 1981 Management Framework Plans or at 1996 grazing levels when GSENM was established. This alternative was

eliminated from detailed analysis because it would be substantially similar to Alternative A. This alternative is not consistent with laws, rules, and regulations governing the grazing program because it does not provide for future allotment-specific adjustments or allow for the flexibility to adapt to new and emerging issues and opportunities through adaptive management.

2.4.7.2 Enhanced Grazing Management Alternative

An enhanced grazing alternative, which set a goal of 146,000 animal unit months (AUMs), was among several proposals brought forward during the GSENM alternative development workshop. The BLM determined that the enhanced grazing alternative does not represent a feasible or reasonable alternative because the 146,000-AUM goal exceeds the grazing capacity identified for the Planning Area. An enhanced grazing alternative would make all allotments available for grazing and implement vegetation restoration actions, water improvements, seeding restoration with improved grass varieties, and other actions as needed to improve land health and forage production.

The level of development and vegetation treatments needed to more than double forage for livestock is not consistent with BLM policy. FLPMA Section 102(a)(7) requires the BLM to manage renewable resources for sustained yields, and the Planning Area contains ecological communities that have low resistance to, and slow recovery from, disturbance. Extensive vegetation treatments specifically to increase forage would also be inconsistent with other resources and policy direction, including management of WSAs.

WSAs overlay approximately half of the Planning Area, and uses and activities in WSAs are guided by BLM Manual 6330. Grazing is a grandfathered use. Grazing uses and facilities may continue in the same manner and degree as prior to the area's designation as a WSA. Generally, in FLPMA Section 603, WSAs, the BLM will continue to authorize the level of permitted use that was documented on October 21, 1976. There can be no reduction in grazing use levels because of attendant impacts on wilderness characteristics. Temporary increases in authorizations and new livestock developments may be approved only if they meet the non-impairment standard or one of the exceptions, such as protecting or enhancing wilderness characteristics.

2.4.7.3 Conservation Grazing Management Alternative

During scoping for the GSENM Grazing Management Plan, Wild Utah Project submitted an alternative for consideration that it named the Conservation Alternative. The submission was co-signed by several other groups: Western Watersheds Project, Southern Utah Wilderness Alliance, Yellowstone to Uintas Connection, Sierra Club, Grand Canyon Wildlands Council, Wild Earth Guardians, and Center for Biological Diversity. The proposal includes criteria for determining lands capable and suitable for livestock grazing.

The BLM conducted preliminary analyses on the capability criteria and one of the suitability criteria provided by the Wild Utah Project (and signed by others) to determine whether the proposal was substantially different from other alternatives analyzed in detail. After the preliminary analysis, it was determined that approximately 543,000 acres (24 percent of the Decision Area) would remain suitable for livestock grazing. This analysis did not consider the remainder of the suitability criteria, which would have evolved during full development of the alternative and further reduced the acres suitable for livestock grazing. At that point it was

determined that the alternative would be similar to Alternative B, which calls for a substantial reduction in grazing.

Some concepts from the Conservation Alternative are carried forward in or are similar to those in Alternative B in these RMPs/EIS, such as a priority on restoring ecosystem health, a high emphasis on research through the establishment of ungrazed reference areas representative of the dominant ecological sites in the Decision Area, the use of native species only to restore existing seedings, and management of biological soil crusts for the ecological functions that they provide.

2.4.7.4 Science and Research-Based Grazing Management Alternative

An alternative that focused solely on science and research was proposed during the development of the GSENM Grazing Management Plan. The alternative would implement livestock grazing practices from a scientific perspective and use outcomes to further scientific knowledge. Scientific studies would be developed monument-wide, as well as in those portions of Glen Canyon where the BLM administers livestock grazing.

This alternative on its own does not meet the purpose and need because it does not identify lands as available or unavailable for livestock grazing. The BLM conducts land health assessments and uses the results of these assessments to adjust grazing management or systems where necessary to improve land health. Other data-gathering efforts, such as the Assessment, Inventory, and Monitoring strategy, can also identify areas where changes in management are needed to improve land health or curtail impacts on monument objects. Full implementation of this alternative may also be speculative. It would require willing researchers and funding as well as permittees willing to graze livestock as prescribed by a research plan. While the science and research-based alternative is not considered in detail as a stand-alone alternative, all alternatives, including the No Action Alternative (Alternative A), include a science and research component.

2.4.7.5 Sustainable Multiple Use Grazing Alternative

During scoping, Grand Canyon Trust, the Wilderness Society, and Great Old Broads for Wilderness provided an alternative for consideration titled “The Sustainable Multiple Use Grazing Alternative” for detailed analysis and requested that it be analyzed unaltered alongside other alternatives considered. As described, this alternative would allow for continued livestock grazing in the Planning Area while reducing environmental damage associated with current grazing management. This alternative emphasized the following:

- Management would prioritize native species diversity.
- Livestock grazing would be managed to protect monument objects.
- Best available science would be used to inform management of grazed and ungrazed areas.
- A diversity of interested publics would be encouraged to engage in management of livestock grazing.
- A diversity of grazing arrangements would be used.
- A number and variety of ungrazed reference areas would be established over time.

During land use planning, the BLM is directed to identify lands as available or unavailable for livestock grazing considering factors such as terrain, soil, vegetation, and watershed

characteristics; the presence of other resources that may require special management; and other uses for the land. Once a land use decision is made to identify those lands, they remain available or unavailable for the life of the plan or until an amendment to the plan is made. This alternative sought provisional determinations of allotments being available or unavailable for livestock grazing due to shifting resource conditions. These determinations would have been predicated on comparing grazed areas to ungrazed reference areas. The reference areas would have been determined after this planning effort was finalized. Only areas currently unavailable and unallotted areas would be identified as unavailable under this alternative. Therefore, at its core, this alternative would not make land use decisions per BLM land use planning guidance.

Additionally, some of the items included in this alternative were not land use planning decisions, as they were either administrative decisions or site-specific, implementation-level decisions, many of which are made during the permit renewal process. These types of decisions are not within the scope of this planning effort. This alternative also included actions for public engagement, including actions that are already required by laws and policies, such as providing public comment opportunities for environmental assessments. Others would diminish a manager's discretion as to how to handle public engagement opportunities. None of the items included are land use planning decisions. While the BLM has decided not to carry this alternative forward for detailed analysis in its unaltered state, many of the goals, objectives, and concepts provided in it form the basis for Alternative B management in these RMPs/EIS. These include managing livestock grazing to protect monument objects and prevent degradation of native species diversity and ecosystem function, utilizing the best science available, establishing ungrazed reference areas representative of the dominant ecological sites in the Decision Area, restoring existing seedings using only native species, managing biological soil crusts for the ecological functions that they provide, and using a diversity of grazing systems.

2.5 Summary Environmental Consequences by Alternative

Refer to Tables ES-2 and ES-3 in the Executive Summary for a tabular description and comparison of environmental consequences across the alternatives and refer to Chapter 3, *Affected Environment and Environmental Consequences*, for a detailed description of potential environmental consequences.

3 Affected Environment and Environmental Consequences

3.0 Introduction

This chapter describes the existing conditions for the Bureau of Land Management (BLM) resources, resource uses, special designations, and social and economic conditions within the Planning Area that may be affected by the alternatives presented in Chapter 2, *Alternatives*. For a more detailed discussion of existing conditions within the Planning Area, refer to the Grand Staircase-Escalante National Monument (GSENM) and Kanab-Escalante Planning Area (KEPA) *Analysis of the Management Situation* (AMS) (BLM 2018b). This chapter also describes the effects that may result from implementing the action alternatives (alternatives B, C, D, and E), or continuing with current management (Alternative A). The affected environment and environmental consequences have been combined in this chapter to provide a concise and parallel description of existing resource conditions and the impacts on them under each alternative.

3.0.1 Analytical Assumptions

A National Environmental Policy Act (NEPA) analysis is used to inform a Federal agency decision and may be conducted on a programmatic (large-scale) level or site-specific level. A programmatic NEPA analysis is intended to address general environmental issues relating to broad decisions and can effectively frame the scope of subsequent site- and project-specific Federal actions. A programmatic analysis is appropriate for the Resource Management Plans (RMPs) due to:

- The large size of the Planning Area
- The programmatic nature of the management plan alternatives, which do not identify the exact locations of future implementation actions
- The unknown locations of future development activities in the Planning Area
- The lack of current, detailed data that are available across the entire Planning Area
- The need to consider programmatic environmental change agents such as climate change, wildfire, and invasive species
- The need to focus the scope of alternatives, environmental effects analysis, and mitigation in subsequent tiered levels of NEPA review
- Following the Record of Decision (ROD) for these RMPs, the BLM would employ monitoring and adaptive management to identify and address resource conflicts and impacts as described in Appendix I, *Monitoring Strategy*.
- Following the signing of the ROD for the RMPs/Environmental Impact Statement (EIS), the BLM will consider specific implementation-level plans and projects. The BLM's decisionmaking process for these activities will include appropriate site-specific NEPA review.

Due to the programmatic nature of this document, several assumptions were made to facilitate the analysis of potential effects. These assumptions set guidelines for the analysis and are disclosed to provide a basis for the conclusions reached in this chapter. Assumptions common

to all alternatives and all resources are listed below, whereas assumptions unique to specific resources and resource uses are listed under the Methods and Assumptions section in the resource sections:

- Environmental consequences descriptions focus on key issues in order to streamline the analysis in accordance with Secretarial Order 3355 and to highlight the key issues of concern for the public, the BLM, and cooperating agencies. If a particular impact is not discussed for a given resource, it is either because no impacts are expected, the anticipated impact was not identified as a key issue at this programmatic scale of analysis, or there is no meaningful difference in impacts by alternative.
- The analysis of impacts focuses on the anticipated effects of management actions and allowable uses proposed under each alternative. The effects of past and present actions are in the description of existing conditions in Chapter 3, *Affected Environment and Environmental Consequences*.
- Discussions of impacts are based on best available existing data. Knowledge of the Planning Area and professional judgment, which are based on observations and analyses of conditions and responses in similar geographic locations, are used to infer environmental effects when data are limited.
- The BLM will implement all applicable standard operating procedures, best management practices (BMPs), mitigation, and adaptive management (Appendix G, *Best Management Practices*; and Appendix I, *Monitoring Strategy*). The analysis incorporates the BMPs included in Appendix G, *Best Management Practices*.
- Sufficient funding and personnel will be available to implement the selected alternative.
- Demand for recreational activities (both dispersed and concentrated), energy production, and mineral development will increase during the life of the RMPs.
- Geospatial data boundaries may have overlaps and gaps where features should align and share a boundary. As a result, there may be a margin of error associated with geographic information system (GIS)-derived acreage calculations.
- For Alternative A, management of the entire Planning Area would continue under the direction of the GSENM Approved Monument Management Plan (MMP) and ROD (BLM 2000), to the extent that the plan is consistent with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682. Under Presidential Proclamation 9682, lands within KEPA are no longer withdrawn from mineral location, entry, disposal, or leasing. Despite the fact that the all mineral-related withdrawals have been lifted, for the purposes of analysis, under Alternative A, it is assumed that the entire KEPA would be closed to mineral material disposal and mineral leasing because these are discretionary uses that are not allowed under the existing Approved MMP and ROD (BLM 2000). Conversely, staking of mining claims, casual use, notice-level activity, and mining operations could occur; however, the BLM would be required to complete project-specific NEPA review and analysis to approve a proposed plan of operations.
- The BLM administers grazing allotments/permits in the National Park Service's (NPS) Glen Canyon National Recreation Area (NRA) adjacent to the Planning Area (Map 1). The alternatives include management for the allotments and permits in Glen Canyon NRA to inform subsequent NPS decisionmaking, and the livestock grazing analysis area for all resources with impacts from grazing includes the grazing allotments that extend into Glen Canyon NRA.

3.0.2 Types of Impacts Addressed

Impacts are defined as modifications to the existing environment brought about by implementing an alternative. Impacts may result from the action directly, indirectly, or cumulatively with other actions, can be beneficial or adverse, and can be characterized as long-term or short-term impacts. Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] 1500–1508) require NEPA reviews to analyze direct, indirect, and cumulative impacts on resources that make up the human environment. In general, direct impacts result from BLM-authorized activities and generally occur at the same time and place as the management activity or action causing the impact. Indirect impacts often occur at some distance or time from the action, but are still reasonably foreseeable and have a cause and effect relationship with the action. Short-term impacts occur during or after the activity or action and may continue for up to 5 years. Long-term impacts occur beyond the first 5 years, an approximation of the time required to restore or reclaim an area following surface disturbance. Cumulative impacts are the direct and indirect impacts of a proposed project's incremental impacts when they are added to other past, present, and reasonably foreseeable actions that occur in the same geographic and temporal context as the proposed action, regardless of who carries out the action.

3.0.3 Allocations and Resource Use Acreages by Alternative

To reduce redundancy and streamline the impact analysis, Table 3-1 is provided to summarize commonly cited allocation and resource use acreages that are likely to affect resources or resource programs. While unique impacts and acreages are included in each resource impact section, Table 3-1 is frequently referenced throughout this chapter.

Table 3-1. Summary of Allocations and Resource Use Acreages by Alternative

Resource Use	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Rights-of-Way					
Exclusion	Planning Area Total: 1,279,311 EC: 232,744 KP: 494,811 GS: 94,394 KE: 457,361	Planning Area Total: 1,769,144 EC: 241,940 KP: 548,143 GS: 191,577 KE: 787,484	Planning Area Total: 1,087,338 EC: 191,008 KP: 492,569 GS: 79,083 KE: 324,677	Planning Area Total: 883,808 EC: 184,826 KP: 411,888 GS: 74,860 KE: 212,235	Planning Area Total: 881,280 EC: 184,826 KP: 411,888 GS: 74,860 KE: 209,707
Avoidance	Planning Area Total: 586,935 EC: 10,800 KP: 56,216 GS: 115,568 KE: 405,071	Planning Area Total: 97,102 EC: 885 KP: 2,884 GS: 18,386 KE: 74,947	Planning Area Total: 533,383 EC: 46,039 KP: 41,810 GS: 107,570 KE: 337,963	Planning Area Total: 330,887 EC: 13,052 KP: 94,394 GS: 24,911 KE: 198,531	Planning Area Total: 354,084 EC: 11,958 KP: 95,143 GS: 24,918 KE: 222,065
Open	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 246,581 EC: 5,777 KP: 16,647 GS: 23,309 KE: 199,791	Planning Area Total: 651,550 EC: 44,947 KP: 44,745 GS: 110,192 KE: 451,666	Planning Area Total: 630,881 EC: 46,041 KP: 43,997 GS: 110,185 KE: 430,659
Designated Utility Corridors	Planning Area Total: 11,012 EC: 0 KP: 0 GS: 0 KE: 11,012	Planning Area Total: 11,012 EC: 0 KP: 0 GS: 0 KE: 11,012	Planning Area Total: 11,012 EC: 0 KP: 0 GS: 0 KE: 11,012	Planning Area Total: 11,012 EC: 0 KP: 0 GS: 0 KE: 11,012	Planning Area Total: 11,012 EC: 0 KP: 0 GS: 0 KE: 11,012
Renewable Energy					
Wind Energy Exclusion	Planning Area Total: 1,866,245 EC: 242,825 KP: 551,027 GS: 209,962 KE: 862,431	Planning Area Total: 1,843,031 EC: 242,825 KP: 551,027 GS: 209,962 KE: 839,216	Planning Area Total: 1,719,004 EC: 242,825 KP: 551,027 GS: 209,962 KE: 715,190	Planning Area Total: 1,224,795 EC: 242,825 KP: 551,027 GS: 209,962 KE: 220,980	Planning Area Total: 1,233,775 EC: 242,825 KP: 551,027 GS: 209,962 KE: 229,960
Wind Energy Available	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 23,215 EC: 0 KP: 0 GS: 0 KE: 23,215	Planning Area Total: 147,241 EC: 0 KP: 0 GS: 0 KE: 147,241	Planning Area Total: 641,451 EC: 0 KP: 0 GS: 0 KE: 641,451	Planning Area Total: 632,471 EC: 0 KP: 0 GS: 0 KE: 632,471

Resource Use	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Solar Energy Exclusion/Not Available	Planning Area Total: 1,866,245 EC: 242,825 KP: 551,027 GS: 209,962 KE: 862,431	Planning Area Total: 1,866,245 EC: 242,825 KP: 551,027 GS: 209,962 KE: 862,431	Planning Area Total: 1,866,245 EC: 242,825 KP: 551,027 GS: 209,962 KE: 862,431	Planning Area Total: 1,863,774 EC: 242,825 KP: 551,027 GS: 209,962 KE: 859,959	Planning Area Total: 1,863,774 EC: 242,825 KP: 551,027 GS: 209,962 KE: 859,959
Solar Energy Variance	Planning Area Total: 0	Planning Area Total: 0	Planning Area Total: 0	Planning Area Total: 2,472	Planning Area Total: 2,472
Livestock Grazing(1)					
Available for Grazing (Total)	2,053,617	1,604,094	2,062,435	2,136,602	2,136,602
Available for Grazing (Total – GSENM Only)	941,007	714,408	942,179	991,874	991,874
Available for Grazing	EC: 187,669 KP: 546,711 GS: 206,627 KE: 831,566 KFO: 50,222 Glen Canyon: 228,505[1] AZ Strip: 2,317[1]	EC: 112,340 KP: 421,649 GS: 180,419 KE: 675,684 KFO: 43,119 Glen Canyon: 168,567[1] AZ Strip: 2,317[1]	EC: 189,609 KP: 544,338 GS: 208,233 KE: 844,200 KFO: 50,229 Glen Canyon: 223,510[1] AZ Strip: 2,317[1]	EC: 236,680 KP: 546,960 GS: 208,233 KE: 848,424 KFO: 65,483 Glen Canyon: 228,505[1] AZ Strip: 2,317[1]	EC: 236,680 KP: 546,960 GS: 208,233 KE: 848,424 KFO: 65,483 Glen Canyon: 228,505(1) AZ Strip: 2,317[1]
Unavailable for Grazing (Total – All Units)	137,339	607,226	164,435	105,519	105,519
Unavailable for Grazing	EC: 37,550 KP: 4,427 GS: 0 KE: 6,722 KFO: 6 Glen Canyon: 88,633[1] AZ Strip: 0[1]	EC: 128,578 KP: 117,035 GS: 29,279 KE: 175,032 KFO: 7,123 Glen Canyon: 150,179[1] AZ Strip: 0[1]	EC: 51,309 KP: 6,801 GS: 1,464 KE: 9,612 KFO: 13 Glen Canyon: 95,236[1] AZ Strip: 0[1]	EC: 4,237 KP: 4,178 GS: 1,464 KE: 5,397 KFO: 0 Glen Canyon: 90,242[1] AZ Strip: 0[1]	EC: 4,237 KP: 4,178 GS: 1,464 KE: 5,397 KFO: 0 Glen Canyon: 90,242[1] AS Strip: 0[1]

Resource Use	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Minerals					
Open to Mineral Leasing with Moderate Constraints	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 32,420 EC: 0 KP: 0 GS: 0 KE: 32,420	Planning Area Total: 374,772 EC: 0 KP: 0 GS: 0 KE: 374,772	Planning Area Total: 547,102 EC: 0 KP: 0 GS: 0 KE: 547,102	Planning Area Total: 529,898 EC: 0 KP: 0 GS: 0 KE: 529,898
Open to Mineral Leasing with Major Constraints	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 237,945 EC: 0 KP: 0 GS: 0 KE: 237,945	Planning Area Total: 276,113 EC: 0 KP: 0 GS: 0 KE: 276,113	Planning Area Total: 104,972 EC: 0 KP: 0 GS: 0 KE: 104,972	Planning Area Total: 120,990 EC: 0 KP: 0 GS: 0 KE: 120,990
Closed/Withdrawn to Mineral Leasing	Planning Area Total: 1,863,347 EC: 242,786 KP: 549,399 GS: 209,623 KE: 861,538	Planning Area Total: 1,593,339 EC: 242,786 KP: 549,399 GS: 209,623 KE: 591,531	Planning Area Total: 1,212,699 EC: 242,786 KP: 549,399 GS: 209,623 KE: 210,891	Planning Area Total: 1,211,507 EC: 242,786 KP: 549,399 GS: 209,623 KE: 209,699	Planning Area Total: 1,212,693 EC: 242,786 KP: 549,399 GS: 209,623 KE: 210,885
Unsuitable /Not-Unsuitable for Surface Coal Mining	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 75,076 / 66,097 EC: 0 KP: 0 GS: 0 KE: 75,076 / 66,097	Planning Area Total: 75,076 / 66,097 EC: 0 KP: 0 GS: 0 KE: 75,076 / 66,097	Planning Area Total: 75,076 / 66,097 EC: 0 KP: 0 GS: 0 KE: 75,076 / 66,097	Planning Area Total: 75,076 / 66,097 EC: 0 KP: 0 GS: 0 KE: 75,076 / 66,097
Open to Mineral Materials Disposal	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 387,308 EC: 0 KP: 0 GS: 0 KE: 387,308	Planning Area Total: 635,952 EC: 0 KP: 0 GS: 0 KE: 635,952	Planning Area Total: 591,507 EC: 0 KP: 0 GS: 0 KE: 591,507
Mineral Materials Disposal Open only to Community Pits of 5 acres or less	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 187,434 EC: 0 KP: 0 GS: 0 KE: 187,434	Planning Area Total: 320,972 EC: 0 KP: 0 GS: 0 KE: 320,972	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 56,229 EC: 0 KP: 0 GS: 0 KE: 56,229

Resource Use	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Closed to Mineral Materials Disposal	Planning Area Total: 1,863,347 EC: 242,786 KP: 549,399 GS: 209,623 KE: 861,538	Planning Area Total: 1,676,678 EC: 242,792 KP: 549,402 GS: 210,379 KE: 674,105	Planning Area Total: 1,155,831 EC: 242,792 KP: 549,402 GS: 210,379 KE: 153,258	Planning Area Total: 1,228,159 EC: 242,792 KP: 549,402 GS: 210,379 KE: 225,586	Planning Area Total: 1,216,375 EC: 242,792 KP: 549,402 GS: 210,379 KE: 213,802
Travel and Transportation Management					
Open	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 116 EC: 0 KP: 0 GS: 0 KE: 116	Planning Area Total: 2,528 EC: 0 KP: 0 GS: 0 KE: 2,528	Planning Area Total: 116 EC: 0 KP: 0 GS: 0 KE: 116
Closed (Planning Area Total)	Planning Area Total: 1,210,137 EC: 227,201 KP: 456,448 GS: 82,011 KE: 444,476	Planning Area Total: 1,417,124 EC: 233,131 KP: 523,167 GS: 93,195 KE: 567,631	Planning Area Total: 64,801 EC: 50,420 KP: 8,485 GS: 2,594 KE: 3,302	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 1,464 EC: 0 KP: 0 GS: 1,464 KE: 0
Limited to Designated Routes (Planning Area Total)	Planning Area Total: 655,408 EC: 15,552 KP: 94,431 GS: 127,889 KE: 417,536	Planning Area Total: 448,955 EC: 9,694 KP: 27,860 GS: 116,767 KE: 294,634	Planning Area Total: 1,801,163 EC: 192,405 KP: 542,543 GS: 207,369 KE: 858,847	Planning Area Total: 1,863,552 EC: 242,825 KP: 551,027 GS: 209,962 KE: 859,738	Planning Area Total: 1,864,500 EC: 242,825 KP: 551,027 GS: 208,498 KE: 862,150
Visual Resource Management					
VRM Class I	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 1,440,487 EC: 233,123 KP: 525,424 GS: 92,866 KE: 589,074	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707
VRM Class II	Planning Area Total: 1,271,860 EC: 210,221 KP: 341,374 GS: 199,645 KE: 520,620	Planning Area Total: 317,454 EC: 9,573 KP: 15,700 GS: 95,022 KE: 197,159	Planning Area Total: 656,661 EC: 53,359 KP: 73,609 GS: 110,612 KE: 419,081	Planning Area Total: 423,160 EC: 51,929 KP: 55,816 GS: 109,404 KE: 207,011	Planning Area Total: 422,457 EC: 51,929 KP: 55,816 GS: 109,365 KE: 205,347

Resource Use	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
VRM Class III	Planning Area Total: 591,456 EC: 32,066 KP: 209,409 GS: 10,166 KE: 339,815	Planning Area Total: 69,900 EC: 103 KP: 9,867 GS: 22,071 KE: 37,860	Planning Area Total: 158,250 EC: 4,067 KP: 7,863 GS: 14,306 KE: 131,474	Planning Area Total: 345,177 EC: 6,031 KP: 15,335 GS: 15,491 KE: 308,320	Planning Area Total: 346,927 EC: 6,031 KP: 15,335 GS: 15,531 KE: 310,031
VRM Class IV	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 38,232 EC: 0 KP: 0 GS: 0 KE: 38,232	Planning Area Total: 169,849 EC: 0 KP: 57,602 GS: 10,251 KE: 101,995	Planning Area Total: 215,380 EC: 0 KP: 67,907 GS: 10,266 KE: 137,207	Planning Area Total: 215,332 EC: 0 KP: 67,907 GS: 10,266 KE: 137,159
Special Designations					
Areas of Critical Environmental Concern	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 309,044 EC: 99 KP: 261 GS: 1 KE: 308,682	Planning Area Total: 130,997 EC: 0 KP: 0 GS: 1 KE: 130,996	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0
National Historic Trails, including Trail Management Corridor	Planning Area Total: 0 EC: 0 KP: 0 GS: 0 KE: 0	Planning Area Total: 76,247 EC: 0 KP: 2,113 GS: 12,878 KE: 61,256	Planning Area Total: 21,238 EC: 0 KP: 409 GS: 2,949 KE: 17,879	Planning Area Total: 1,863 EC: 0 KP: 50 GS: 404 KE: 1,409	Planning Area Total: 14,201 EC: 0 KP: 409 GS: 2,949 KE: 10,843
Wild and Scenic Rivers (miles)	Planning Area Total: 224 EC: 131 KP: 45 GS: 20 KE: 29	Planning Area Total: 224 EC: 131 KP: 45 GS: 20 KE: 29	Planning Area Total: 224 EC: 131 KP: 45 GS: 20 KE: 29	Planning Area Total: 224 EC: 131 KP: 45 GS: 20 KE: 29	Planning Area Total: 224 EC: 131 KP: 45 GS: 20 KE: 29
Wilderness Study Areas	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707	Planning Area Total: 881,159 EC: 184,826 KP: 411,888 GS: 74,738 KE: 209,707

Note: Geospatial data boundaries may have overlaps and gaps where features should align and share a boundary. As a result, there may be a margin of error.

[1] These acreages are included because GSENM has administrative responsibility for livestock grazing in these portions of the BLM's Kanab Field Office, Arizona Strip Field Office, and National Park Service-managed lands in Glen Canyon National Recreation Area (Glen Canyon).

EC – Escalante Canyons Unit, KFO – Kanab Field Office, KP – Kaiparowits Unit, GS – Grand Staircase Unit, KE – Kanab-Escalante Planning Area, GSENM – Grand Staircase-Escalante National Monument, VRM – Visual Resource Management

3.1 Air Resources

3.1.1 Affected Environment

The analysis area for air resources includes Garfield and Kane Counties, encompassing the Planning Area plus the nearby Class I and Class II areas of interest of Bryce Canyon National Park, Zion National Park, Capitol Reef National Park, Box Death Hollow Wilderness Area, Kanab Creek Wilderness Area, and Glen Canyon NRA as designated under the Prevention of Significant Deterioration program of the Clean Air Act (Map 2). Refer to Chapter 2, Section 2.2.1, *Air Quality* (pages 5–12), in the GSENM and KEPA AMS (BLM 2018b) for information on Class I designations and other regulatory programs and requirements.

Air quality in the analysis area is good, typical of undeveloped regions in the western United States. Garfield and Kane Counties are designated by the U.S. Environmental Protection Agency (EPA) as attainment (meeting the standards) or unclassified for all National Ambient Air Quality Standards (NAAQS). Table 3.1-1 shows the most recent estimate of total emissions for the two-county region. Volatile organic compounds (VOCs) make up the largest quantity of criteria pollutant emissions in both counties and originate mostly from biological sources such as vegetation and soils, along with the burning of fuels such as gasoline, coal, natural gas, and wood (UDAQ 2017). Many VOCs are hazardous air pollutants (HAPs). VOCs can also combine with nitrogen oxides (NO_X) in the atmosphere to form ground-level ozone. While neither Garfield County nor Kane County has violated the ozone NAAQS, ground-level ozone is a regional issue affecting Utah and surrounding States. Therefore, ozone and its precursors (VOCs and NO_X) are pollutants of concern. The analysis area experiences high winds from the south during spring and summer, which reduce the probability of ground-level ozone formation during these seasons. Refer to Appendix M, *Air Quality Technical Support Document*, for more information on wind speed and direction in the analysis area.

Table 3.1-1. 2014 Criteria Pollutant Emissions (tons per year)

Criteria Pollutant	Kane County	Garfield County
Carbon monoxide	12,471.19	12,654.67
Nitrogen oxides	854.50	650.01
Particulate matter 10 microns or less in diameter	1,544.46	2,186.49
Particulate matter 2.5 microns or less in diameter	234.61	379.19
Sulfur oxides	12.29	3.83
Volatile organic compounds	46,630.31	44,283.16

Source: UDAQ 2017

Particulate matter (both 10 [PM_{10}] and 2.5 [$PM_{2.5}$] microns or less in diameter) is also a pollutant of concern. Local population centers and areas immediately surrounding surface-disturbing activities are the most vulnerable to increased particulate matter concentrations, likely attributable to fugitive dust resulting from high traffic volumes and poor vegetative cover. The BLM regularly authorizes surface-disturbing projects but applies mitigation measures and adaptive management to reduce the potential for fugitive dust creation. Fugitive dust can be found across the analysis area from wildfire events and during times of high wind. All prescribed burns occurring in the Planning Area are managed in compliance with guidelines in

the *Utah Smoke Management Plan* (UDAQ 2006) to ensure application of mitigation measures and to reduce adverse impacts on public health and safety and visibility.

The use of equipment powered by internal combustion engines, such as cars, construction equipment, and off-highway vehicles (OHVs), contribute carbon monoxide (CO), carbon dioxide (CO_2), and NO_X emissions to the analysis area. On-road, off-road, and area sources are responsible for the majority of all NO_X emissions in Garfield and Kane Counties. Sulfur oxide levels are not currently of concern in either Garfield County or Kane County (Table 3.1-1). Refer to Chapter 2, Section 2.2.1, *Air Quality* (pages 5–12), in the AMS (BLM 2018b) for more information on criteria pollutant levels, sources, and the NAAQS in Garfield and Kane Counties.

Ozone levels have been decreasing in the analysis area since 2002; however, concentrations remain near the NAAQS and exceedances of the current 70 parts per billion standard have previously been recorded. Visibility has been monitored in nearby Class I areas and has shown to be improving on the clearest days since 1999 (NPS 2010). Atmospheric deposition levels, as measured in Bryce Canyon National Park over the same time frame, have shown a statistically substantial decrease in sulfate deposition. Data also show a decrease in nitrate deposition and an increase in ammonium deposition, although these are not statistically significant trends (NPS 2010). Population growth is forecasted in the analysis area and the associated increases in tourism, recreation, and resource development would likely contribute to increased concentrations of all criteria pollutants (BLM 2018b).

3.1.1.1 Climate Change

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years; key variables include temperature and precipitation. Climate change includes both historic and predicted climate shifts that are trends occurring over longer time scales. The 2018 BLM Utah Air Monitoring Report (BLM 2019e) discusses the current climate conditions in Utah, and is incorporated by reference. The report presents the three-decade average and trends of temperature and precipitation for each of the seven climate divisions in Utah. Most of the Planning Area falls within the south-central climate division. South-central Utah's climate has average annual temperatures ranging between 40–56 degrees Fahrenheit (ºF) and average precipitation of 10–15 inches (BLM 2019f), with higher elevations having colder temperatures. Escalante has annual average temperatures of about 51.5 ºF. Trends over the most recent climate normal period (1981–2010) show average temperatures increased 0.5 ºF while precipitation decreased 0.8 inch.

The Earth is experiencing long-term warming trends globally with increasing anthropogenic greenhouse gas (GHG) emissions, and the Colorado Plateau ecoregion will be similarly affected. Lands within the analysis area range from moderate-low to very high climate change potential (Map 93). In November 2018, the Fourth National Climate Assessment Volume II was published (USGCRP 2018). Compared to previous reports, the Fourth National Climate Assessment provides greater detail on regional scales, as impacts and adaptation tend to be realized at a more local level. The Southwest region (Arizona, California, Colorado, New Mexico, Nevada, and Utah) encompasses diverse ecosystems, cultures, and economies, reflecting a broad range of climate conditions, including the hottest and driest climate in the United States. The average annual temperature of the Southwest increased 1.6 ºF between 1901 and 2016. Moreover, the region recorded more warm nights and fewer cold nights between 1990 and 2016, including an increase of 4.1 ºF for the coldest day of the year. Each National Climate Assessment has

consistently identified drought, water shortages, and loss of ecosystem integrity as major challenges that the Southwest confronts under climate change. Since the last assessment, published field research has provided even stronger detection of hydrological drought, tree death, and wildfire increases that have been statistically different from natural variation (USGCRP 2018).

Refer to Chapter 2, Section 2.2.2, *Climate Change* (pages 13–15), in the AMS (BLM 2018b) and Appendix M, *Air Quality Technical Support Document,* for more information on GHGs, global warming potential, and climate change modeling predictions in the Colorado Plateau ecoregion.

3.1.2 Environmental Consequences

3.1.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on air quality and climate change from a scenario utilizing the reasonably foreseeable development (RFD) for minerals (BLM 2018c) and other conservative management assumptions. When assessing effects on air resources, it is important to consider the cumulative air pollutant emissions or reductions from all other program-specific management decisions.

To meet obligations in the National Memorandum of Understanding Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions through the NEPA Process, the BLM formed an Air Resources Technical Advisory Group (AiRTAG) consisting of representatives from the U.S. Forest Service, the NPS, the U.S. Fish and Wildlife Service (USFWS), and the EPA. Additionally, the BLM consulted with the Utah Division of Air Quality. Potential emissions from oil and gas development and for a coal mine in lands removed from GSENM were reviewed by AiRTAG. After reviewing the emissions inventory, the BLM and AiRTAG decided to perform a near-field modeling analysis to better understand potential impacts on nearby communities and Class I areas. Far-field modeling was determined to not be necessary based on the emissions inventory and the speculative nature of development at the RMP stage. If development activity exceeds what was anticipated in the RFD and in this EIS, additional cumulative far-field modeling may be required. In addition, prior to project-specific approval, additional air quality analyses may be required to comply with NEPA, the Federal Land Policy and Management Act (FLPMA), and/or other applicable laws and regulations.

Impacts on air resources would primarily result from changes in mineral activity. Emissions resulting from these changes were quantified in an emissions inventory. The emissions calculations were based on the best available data; air, visibility, and emission inventory procedures; and professional and scientific judgment. Assumptions were used when specific data or procedures were unavailable. The calculations used emissions factors that are accepted and recognized by State and Federal regulatory agencies and were calculated for the BLM's predicted maximum emissions scenario, as defined by the *Mineral Potential Report* (BLM 2018c). Potential air quality and visibility impacts on nearby Class I and Class II areas of interest and population centers from minerals activities were assessed through the use of EPA-preferred near-field models. Refer to Appendix M*, Air Quality Technical Support Document*, for more information on emissions inventory calculations and air quality modeling performed.

Air pollutant emissions could also result from changes in levels of recreation, travel, prescribed fire, or livestock grazing. Emissions from these sources are analyzed qualitatively by describing

the relative magnitude of emissions changes compared with current management, and indicating the extent of potential impacts. All analyses consider emissions of criteria pollutants as well as GHGs.

This analysis uses the following assumptions:

- A total of 14 oil and gas wells (four exploration and ten new development wells) could be drilled in KEPA during the next 15 years (BLM 2018c).
- Coal production could be 3 to 5.5 million tons per year for an underground mine covering roughly 10,000 acres in KEPA (BLM 2018c).
- The RFD of 10 producing oil and gas wells (and four exploratory wells) and one coal mine would vary by alternative because mineral development constraints vary between the alternatives in KEPA. Alternative D assumes that all 10 producing oil and gas wells (and four exploratory wells) and the coal mine would be developed. Alternative C assumes the development of 5 oil and gas production wells and no coal mine. Alternative B assumes the development of 2 oil and gas wells and no coal mine.
- There is a correlation between global concentrations of GHGs and climate change. However, it is not currently possible to link projected GHG emissions associated with any particular activity to specific environmental impacts at a specific site or location.

3.1.2.2 Direct and Indirect Effects

Management of mineral development, fire and fuels, lands and realty, livestock grazing, recreation, and transportation have the potential to result in direct and indirect impacts on air quality and climate through changes in emissions levels. Management decisions that institute constraints on resource uses (e.g., limiting surface disturbance on lands with wilderness characteristics) would limit the potential adverse impacts on air resources from increased air pollutant emissions.

Impacts from Changes in Emissions from Mineral Development Activity

In accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, the lands within the monument remain withdrawn from mineral location, entry, disposal, and leasing, subject to valid existing rights; therefore, as a result of the lands being withdrawn and unlikely development of valid existing rights, there is no anticipated new mineral development activity in GSENM. Short- and long-term direct and indirect impacts on air resources could result from an increase in mineral development activity in KEPA, which is no longer withdrawn as a result of Presidential Proclamation 9682. Impacts could result from the emissions of criteria pollutants including NO_X, CO_2, CO, particulate matter, fugitive dust, HAPs, and GHGs, resulting largely from the heavy equipment activity during drilling and construction phases, the increased traffic on unpaved and paved roads, and well flaring. Compression activities, including burning of natural gas, could increase emissions of NO_X, CO, and CO_2, while any glycol operations or flashing could increase emissions of particulate matter, CO, NO_X, and VOCs. Emissions of criteria pollutants can adversely affect human and vegetative health. Coal development in KEPA would increase criteria pollutant emissions and also increase GHG emissions that could contribute to climate change. Other leasable mineral development in KEPA would also contribute to these adverse impacts, and could result in additional adverse impacts through the emission of HAPs.

Mineral leasing and mineral materials disposal would result in increased particulate matter, fugitive dust, NO_X, CO_2, VOCs, and other pollutants from development, production, and mineral-related traffic. Alternative B places the greatest constraints on mineral leasing and mineral materials disposal. Emissions associated with locatable mineral development are expected to be similar to those under Alternative A, but to a lesser degree due to the 506,995 acres of recommended locatable mineral withdrawals in KEPA under Alternative B. As a result, overall emissions associated with mineral development are expected to be minimal under Alternative B. Alternative C would reduce the extent of mineral constraints and the area recommended for mineral location withdrawal in KEPA (213,705 acres) compared to alternatives A and B. As a result, Alternative C could increase the potential for mineral development and mineral-related emissions. Alternatives D and E place the fewest constraints on mineral leasing and mineral materials disposal compared to the other alternatives. Alternatives D and E also decrease the area recommended for mineral location withdrawal (0 acres).

Due to the limited extent of anticipated mineral development under alternatives A, B, and C, there would be no anticipated exceedances of NAAQS associated with mineral development in KEPA. Under alternatives D and E, air quality modeling indicates that development of the reasonably foreseeable mineral projects (BLM 2018b) could contribute to a short-term localized exceedance of the 1-hour NO_2 NAAQS. Due to the short duration of activities that would lead to this modeled exceedance of NO_2, it is not likely that mineral development activities would result in an NAAQS violation. There were no other potential NAAQS exceedances identified due to the reasonably foreseeable mineral development projects (BLM 2018b) under alternatives D and E. The potential impacts at nearby Class I areas would also be below the applicable Prevention of Significant Deterioration increments. Short-term exposure to HAPs is not likely to be of concern under any alternative. Refer to Appendix M, *Air Quality Technical Support Document,* for more information.

Estimated impacts on visibility from reasonably foreseeable mineral development in KEPA are below the applicable Federal Land Manager's Air Quality Related Values Work Group project level thresholds for distant Class I areas (USFS et al. 2010). Based on air quality modeling, minerals activity under alternatives D and E has the potential to produce a perceptible plume in contrast with the sky and terrain in Bryce Canyon National Park. This could occur as a result of the overlap between oil and gas completion activities and days of adverse meteorological conditions and would therefore be a rare occurrence. No adverse impacts from reductions in visibility are expected in the other nearby Class I or Class II areas of interest. The potential for visibility impacts would be reduced under alternatives C, B, and A due to additional constraints placed on mineral development in KEPA that may reduce the extent of development under those alternatives. Refer to Appendix M, *Air Quality Technical Support Document*, for more information on near-field modeling results.

Closing areas to mineral materials disposals could increase emissions by requiring maintenance/construction projects in the Planning Area to obtain materials from sources that are farther away, thus increasing vehicle travel distances and associated emissions. These impacts would be greatest under alternatives B and C due to the closing of 674,105 acres and 153,258 acres to mineral materials disposals in KEPA, respectively.

Climate change is a global issue and while alternatives D and E would increase GHG emissions compared to the other alternatives, the relatively low level of RFD (BLM 2018b) and associated GHG emissions is not expected to notably affect regional or global climate change. Refer to

Appendix M, *Air Quality Technical Support Document,* for additional information on climate change.

Application of mineral development and air quality BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect adverse impacts on air resources from increased emissions. For example, applying best available control technologies would minimize air pollutant emissions and utilizing directional drilling would decrease the acreage of surface disturbance from oil and gas well pads and reduce fugitive dust.

Impacts from Changes in Emissions from Non-Mineral Related Activity

The use of prescribed fire and wildland fire management could cause short- and long-term adverse impacts from emissions of particulate matter, CO, and GHGs. The extent of adverse impacts from emissions would depend on the size of the fire and meteorological conditions (e.g., wind). Fire-suppression activities may also increase the use of heavy equipment on unpaved roads and result in emissions of particulate matter, CO, NO_X, and HAPs. Vegetation management treatments would cause short-term adverse impacts by temporarily increasing particulate matter emissions, but would provide long-term beneficial impacts on air resources by aiding vegetation resiliency and soil stabilization. Management actions that improve soil and vegetation health or increase biomass could improve carbon sequestration and result in long-term beneficial impacts by mitigating climate change effects in the Planning Area (Environmental News Network 2016; McDermot and Elavarthi 2014). Fire and vegetation management would occur under all alternatives, and air pollutant emissions would occur regardless of the alternative selected. Guidance and BMPs would help to mitigate adverse impacts.

Livestock grazing and livestock grazing management (e.g., the maintenance or development of range improvement) generate both vehicular exhausts and dust. These activities, along with enteric fermentation from livestock, also create GHGs. Higher grazing densities and climate change can also lead to destruction of biological soil crusts, leaving the Planning Area more susceptible to particulate matter emissions from windblown dust (Memmott et al. 1998; Rutherford et al. 2017). The Planning Area is available for livestock grazing under all alternatives, though to varying degrees. Alternatives D and E allow the most livestock grazing utilization, followed by Alternative C, Alternative A, and Alternative B (see Table 3-1).

The use of OHVs for recreational and other purposes could cause fugitive dust and vehicular exhaust emissions of particulate matter, CO, and NO_X. An increase in OHV use could be accompanied by increased criteria pollutant emissions and increased levels of fugitive dust. The amount of OHV use in the Planning Area is also driven by increases in visitation that will occur under all alternatives. As a result, emissions from OHV use would likely be similar under all alternatives.

The BLM will utilize an adaptive management approach (Appendix I, *Monitoring Strategy*; Appendix H, *Stipulations and Exceptions, Modifications, and Waivers*) to limit potential adverse impacts from resource development and associated changes in emissions. If projects are proposed that could result in adverse impacts on air quality, additional analyses would occur during project-specific permitting. Site-specific permitting may prescribe additional stipulations, mitigation measures, and adaptive management to reduce emissions and associated impacts

in the Planning Area, nearby Class I and Class II areas of interest, and nearby population centers.

3.1.2.3 Cumulative Effects

The cumulative impacts analysis area for air resources is Garfield and Kane Counties, as well as the nearby Class I and Class II areas of interest. This area encompasses emissions from various sources within the region that may contribute to emissions and affect air quality concentrations and air quality-related values throughout the region. Trending increases in visitation in the analysis area will continue to result in increases in vehicle-related emissions and contributions to cumulative impacts. Historic grazing, vegetation treatments, and recreation (including OHV) management plans and the upcoming Capitol Reef National Park Livestock Grazing and Trailing Management Plan could also contribute to cumulative air quality levels if these plans result in management that increases emissions-generating activities (Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*). These activities, along with other potential development activities in the analysis area such as mineral development (e.g., Alton Coal Tract, Upper Valley Field) and construction of pipelines (e.g., Lake Powell pipeline) and transmission lines, could affect ambient air quality, visibility, and atmospheric deposition if they continue to increase with upward trends in population density. Continued operation of landfills in the analysis area and potential expansion of landfills could contribute to emissions that affect air quality, including contributions of methane.

Currently, the only oil and gas development taking place within the analysis area is from development and production activities in the Upper Valley oil field. The total current direct GHG emissions of 46,566 metric tons CO_2 equivalent per year are associated with 23 active producing oil and gas wells as reported by the Utah Division of Oil, Gas and Mining (UDOGM 2018) at the end of 2018. One additional oil and gas producing well is reasonably foreseeable, for which the direct GHG emissions associated with the drilling and operation is 2,832 metric tons CO_2 equivalent per year. Refer to Appendix M, *Air Quality Technical Support Document*, for additional information on cumulative GHG emissions including indirect and downstream GHG emissions.

Air quality and climate change are also affected by emissions generated outside of the analysis area, which could include anthropogenic sources (e.g., commercial activities, mineral development, power generation) and natural sources (e.g., fires). Due to the increased potential for mineral and other development, among the alternatives, alternatives D and E would increase contributions to cumulative emissions and associated air quality impacts more than the other alternatives. Impacts from climate change would be mitigated through continued observation and science-based adaptive management actions under all alternatives.

In addition to the RFD projects in KEPA that are modeled and described in the air quality assessment, other RFD projects in the region have the potential to affect air quality. For example, in August 2018, the BLM released the ROD for the Alton Coal Tract Lease by Application for Federal coal resources on lands near Alton, Utah, approximately 8 miles from the Planning Area and within the near-field modeling boundary used for this air quality assessment. The selected alternative in the ROD allows for the competitive lease sale of approximately 2,114 acres, of which an estimated 30.8 million tons of coal would be recoverable (Map 70). The potential competitive lease sale and subsequent development and

operation of a coal mine on the Alton Coal Tract would result in emissions of criteria air pollutants, HAPs, and potential effects on ambient air quality and air quality–related values (e.g., visibility, deposition) in the region. Refer to the Air Resources Impact Assessment Technical Report in the Alton Coal Tract Lease by Application Final EIS for additional information (BLM 2018g).

In addition, decommissioning and closure of facilities in the analysis area that emit pollutants could result in reductions in cumulative regional emissions and associated air quality impacts. For example, in 2017, the Salt River Project decided to close the Navajo Coal Fired Electric Generating Station in northern Arizona or transfer ownership of the power plant to another entity. As of April 2019, a new owner for the Navajo Generating Station has not been secured. Closure of the Navajo Generating Station would result in notable reductions in criteria pollutant emissions, HAPs, and associated air quality impacts in the region.

3.2 Cultural Resources

3.2.1 Affected Environment

The analysis area for cultural resources is the Planning Area. Cultural resources within the Planning Area span the period of human occupation of the region. Approximately 7 percent of the Planning Area has been inventoried for cultural resources. Previous inventories indicate that there are 3,179 known cultural resources sites within the Planning Area. Of this total there are 483 cultural resources in the Escalante Canyons Unit; 430 in the Grand Staircase Unit; 1,010 in the Kaiparowits Unit; and 1,256 in KEPA. In addition, in 2002, Brigham Young University conducted a cultural resource survey on 3,492 acres that included the Little Desert RMZ that is included in alternatives B, C, D, and E. The survey documented a total of 126 new sites and revisited/re-recorded 19 previously recorded sites (BYU 2002). Of the 145 sites in the 3,492-acre survey area, 133 were recommended as eligible for the National Register of Historic Places (NRHP).

Refer to Appendix 1 (*Maps*), Map 3, Cultural Resources (page 215), in the AMS (BLM 2018b) for more information.

The human occupation in the Planning Area began during the Paleoindian period (11,500–9,500 B.C.). Paleoindian sites are rare in the Planning Area and primarily consist of isolated diagnostic projectile points, such as fluted Clovis, Folsom, and large, lanceolate-style points used during megafauna hunting activities. The subsequent Archaic period (7,000–100 B.C.) began following regional climatic shifts and the extinction of North American megafauna species. Hunter-gatherers continued using lanceolate points and also produced stemmed or notched dart points. The Archaic period is commonly divided into Early, Middle, and Late sub-periods. Archaic sites often consist of flaked-stone and ground stone scatters, as well as rock art sites, temporary camps, and uncommon residential sites. While common across the Planning Area, Archaic sites are often obscured by later Basketmaker and Pueblo Periods sites. Refer to Appendix 2, *Cultural Resources* (pages 245–256), in the AMS (BLM 2018b) for more information about Paleoindian and Archaic resources within the Planning Area.

The subsequent Formative Period (100 B.C.–A.D. 1250) began with the adoption of agriculture, which greatly altered prehistoric lifeways within the Planning Area. Within the Grand Staircase and Kaiparowits Units, the Virgin Ancestral Pueblo (also referred to as the Anasazi) occupied and farmed benches, terraces, and canyons at elevations between 4,700 feet and 6,400 feet

above mean sea level. The generally accepted Virgin Ancestral Pueblo chronology includes five periods: the Basketmaker II Period (100 B.C.–A.D. 400), the Basketmaker III Period (A.D. 400–700), the Pueblo I Period (A.D. 700–900), the Pueblo II Period (A.D. 900–1150), and the Pueblo III Period (A.D. 1150–1250). Basketmaker II groups settled along the base of the Vermilion Cliffs in areas particularly suited for high water table and alluvial outwash farming. From the Late Basketmaker II Period through the Pueblo III Period, Virgin Ancestral Pueblo populations occupied higher-elevation settings to maximize precipitation farming (McFadden 2016). Over the course of the Formative Period, land-tenure systems developed in the Planning Area as sites were abandoned and reoccupied over hundreds of years. Virgin Ancestral Pueblo sites are commonly defined by an arc of surface storage structures around a semi-subterranean pithouse; temporary camps; field houses; the presence of Rose Spring, Parowan Basal-notched, and Bull Creek projectile points; and a diagnostic suite of ceramic wares and types. Other site types found include rock art panels and isolated storage units. Virgin Ancestral Pueblo site density is approximately 70 sites per square mile along the Shinarump and Vermilion Cliffs. Refer to Appendix 2, *Cultural Resources* (pages 245–256), in the AMS (BLM 2018b) for more information regarding early Formative Period cultural resources.

From the Basketmaker III Period to the Pueblo II Period, there was little evidence of broad-ranging external influence. In the late Pueblo II Period, however, an influx of "exotic" Kayenta Ancestral Pueblo material culture from southern groups appears within the central and eastern sections of the Planning Area. The appearance of finely dressed, masonry, L-shaped unit pueblos is evidence of probable Kayenta Ancestral Pueblo migration into the Planning Area (McFadden 2016). The arrival of Kayenta migrants to the region appears to have lasted only a generation or two, and by A.D. 1150, the settlement and architecture within the Virgin Ancestral Pueblo region returned to a more traditional pattern. By A.D. 1250, the Virgin Ancestral Pueblo appear to have abandoned the Planning Area. Refer to Appendix 2, *Cultural Resources* (pages 245–256), in the AMS (BLM 2018b) and the *Formative Chronology and Site Distribution on the Grand Staircase-Escalante National Monument: A Research Reference* (McFadden 2016) for more information regarding later Formative Period cultural resources.

The Formative Period within the Escalante Canyons Unit and portions of the Kaiparowits Unit is represented by the Fremont archaeological culture. The Fremont chronology consists of three periods: the Early Agricultural Period (A.D. 100–500), the Early Formative Period (A.D. 500–1050), and the Late Formative Period (A.D. 1050–1200). During the Early Agricultural Period, the Fremont practiced a seasonal residential subsistence pattern, occupying canyon bottoms and valleys during the summers and hunting camps at higher elevations during the winter (McFadden 2016). The Early Formative Period is defined by the adoption of ceramics by the Fremont. The Late Formative Period in the Kaiparowits Unit is characterized by a mix of Anasazi and Fremont material culture and architecture. This mixture may indicate interactions between Kayenta Anasazi and Fremont groups. The Fremont of the Escalante Unit appear to have abandoned the area around A.D. 1050. Refer to Appendix 2, *Cultural Resources* (pages 245–256), in the AMS (BLM 2018b) and the *Formative Chronology and Site Distribution on the Grand Staircase-Escalante National Monument: A Research Reference* (McFadden 2016) for more information regarding Formative Period cultural resources in the Escalante Canyons Unit.

The Late Prehistoric and Protohistoric Periods (A.D. 1250–1776) represent a return to hunter-gatherer subsistence strategies across the Planning Area. Numic-speaking populations appear in the region as early as the 1300s. Archaeological sites of the Late Prehistoric and

Protohistoric periods are commonly associated with the Southern Paiute and include temporary and hunting camps, resource procurement locales, and seasonal habitations. Hopi yellow ware ceramics documented throughout the Planning Area indicate that Hopi traveled to areas potentially associated with pilgrimage. Navajo use of the region appears to occur after the arrival of Euro-Americans. Refer to Appendix 2, *Cultural Resources* (pages 245–256), in the AMS (BLM 2018b) for more information. The Kaibab Band of Paiute Indians and the Navajo claim certain locations within the Planning Area as Traditional Cultural Properties, although none to date have been officially documented. The Kaibab Paiute still utilize lands and resources within the Planning Area for traditional purposes. Refer to Chapter 2, Section 2.2.3, *Cultural Resources* (pages 16–40) and Appendix 2, *Cultural Resources* (pages 245–256), in the AMS (BLM 2018b) for more information regarding Late Prehistoric and Protohistoric cultural resources.

Historic-period use of the Planning Area is associated with Euro-American population expansion and grazing. Several notable historic trails, including the Hole-in-the-Rock Road (HITRR) and the Old Spanish National Historic Trail (OSNHT), which each have segments listed in the NRHP, pass through sections of the Planning Area. The NPS and BLM are completing a Traditional Cultural Properties Ethnographic Study to support the recognition of the HITRR as a Church of Jesus Christ of Latter Day Saints Traditional Cultural Property. Relatively small-scale historic coal, manganese, and copper mining operations occurred within the Planning Area, as well. Ranching-related activities, however, constitute the most common historic-period activity within the Planning Area. Known historic-age sites within the Planning Area include corrals, fence lines, stock tanks, trail segments, historic inscriptions, and the remains of various types of structures. Refer to Appendix 2, *Cultural Resources* (pages 245–256), in the AMS (BLM 2018b) for more information regarding historic-age cultural resources.

The BLM has identified the potential threats to cultural resources within the Planning Area: human-induced impacts, vandalism, looting and casual artifact collection, cattle grazing, and natural erosion. Zweifel (2010) estimated that up to 40 percent of archaeological sites in the Kanab Field Office and adjacent to the Planning Area may suffer from human-induced impacts. While this percentage is likely lower within the Planning Area due to current management actions, human-induced impacts are still an important management concern. Vandalism of archaeological sites, especially rock art panels, appears to be on the rise within the Planning Area due to increased tourism. Looting of archaeological sites has decreased over the past two decades; however, casual artifact collection persists. A recent analysis completed by the BLM indicates that cattle grazing has had a wide range of effects on cultural resources, from almost no impacts in some locations to significant adverse effects in other locations within the Planning Area. Beyond cattle grazing, the natural processes of erosion reflect an unavoidable natural adverse impact on cultural resources. Refer to Chapter 2, Section 2.2.3, *Cultural Resources* (pages 16–31), in the AMS (BLM 2018b) for more information.

3.2.2 Environmental Consequences

3.2.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on cultural resources from implementation of the management alternatives. Impacts on cultural resources would primarily result from the following impact mechanisms:

- Destruction or removal of cultural resources from surface-disturbing activities

- Implementing proactive cultural resource management

This analysis uses the following assumptions:

- Impacts on cultural resources are long term and permanent, because cultural resources are non-renewable resources that cannot be replaced once lost.
- Impacts on historic properties related to BLM-authorized surface disturbances will be addressed through the National Historic Preservation Act (NHPA) Section 106 review process, which requires direct or indirect effects on properties included or eligible for inclusion in the NRHP to be avoided, minimized, or mitigated.
- Any increase in visitation, road construction, grazing, and recreational development will result in direct and indirect impacts on cultural resources.
- Unpermitted and unauthorized activities within the Planning Area, including unauthorized OHV use, vandalism and looting, unmonitored site visitation, and group camping in unauthorized locations, will continue to occur and will affect cultural resources in the Planning Area. Impacts from unpermitted and unauthorized activities include: surface artifact collection and displacement of surface features and artifacts; damage, destruction, vandalism, and looting of cultural resource sites, artifacts, and features; increased and accelerated erosion and soil degradation; and human trampling. The BLM does not manage unpermitted and unauthorized activities, but can help to control these activities through closures of sensitive areas, education, and other management.

3.2.2.2 Direct and Indirect Impacts

In accordance with NHPA Section 106, BLM management under any of the alternatives must avoid, minimize, or mitigate direct and indirect impacts on historic properties. Although this process ensures resolution of any adverse effects on historic properties, management decisions under some alternatives may result in more prevalent use of avoidance strategies, whereas other alternatives would be more likely to minimize or mitigate impacts. The alternatives would also vary in regard to potential direct and indirect impacts on cultural resources not considered historic properties that were previously evaluated and deemed ineligible for listing in the NRHP, or where site conditions or assessments of eligibility have changed.

Direct, adverse impacts on cultural resources typically result from actions that disturb the ground's surface or physically alter or damage all or part of a resource; move cultural materials from their original positions (in situ) prior to scientific documentation; alter the characteristics of the surrounding environment that contribute to the significance of a particular cultural resource; introduce visual or audible elements out of character with the property or alter its setting; or result in neglect or physical exposure of the resource to the extent that it deteriorates or is destroyed. Indirect impacts on cultural resources could result from the development of facilities and infrastructure, increased access to previously remote or difficult to get to areas, and opening of areas to camping or OHV use, which increase the potential for damage to or erosion effects on cultural sites.

Authorization of a broad range of resource use activities and conservation actions would result in direct adverse impacts on cultural resources through surface disturbance or other damage. Recreation, mineral development in KEPA, OHV use, and livestock grazing are the primary activities that could result in adverse impacts on cultural resources. Management decisions and allocations that limit the potential for adverse impacts on cultural resources by instituting constraints on resource uses include designation and management of special designations

(e.g., Areas of Critical Environmental Concern [ACECs] that limit surface disturbance for the protection of ACEC values), certain recreation management areas (e.g., Special Recreation Management Areas [SRMAs] and Recreation Management Zones [RMZs]) that limit surface disturbance to meet recreation objectives), lands with wilderness characteristics (e.g., limits on surface disturbance and activity to preserve naturalness and outstanding opportunities for solitude), and resource-/area-specific protective closures (e.g., area closures as a scientific control). Management decisions that increase access to the Planning Area could increase accessibility to cultural resources, resulting in increased potential for damage and vandalism.

Impacts from BLM-Authorized Surface-Disturbing Activities and Proactive Management of Cultural Resources

BLM-authorized surface-disturbing activities—primarily from forestry and woodland product harvest, fire and fuel treatments, mechanical vegetation treatments, development of recreation facilities, rights-of-way (ROWs), range improvements, mineral development in KEPA, renewable-energy facilities in KEPA, and travel routes and trails—have the potential to directly and indirectly affect cultural resources. Subsurface excavation or other types of ground-disturbing activities would have the greatest potential to damage cultural resource sites, artifacts, and/or features. Development or maintenance that requires vegetation clearing, grading, and leveling of ground surfaces can also damage or displace surface artifacts and features. Indirect adverse impacts associated with authorized development activities could result from increased and accelerated erosion and soil degradation from vegetation removal and soil disturbances. A potential beneficial impact of surface disturbances mitigated through Section 106 is the opportunity to retrieve and catalogue information about cultural sites, artifacts, or features that contribute to scientific understanding of past cultures.

Livestock grazing within the livestock grazing analysis area (Maps 54 through 59) and cross-country OHV travel have the potential to damage exposed or shallowly buried cultural artifacts. However, due to the long-term historic use of the Planning Area for livestock grazing and current restrictions on cross-country OHV travel, impacts from these activities are unlikely under Alternative A unless cultural artifacts are newly exposed through erosion or soil disturbance. Impacts from these activities are similarly unlikely under Alternative B, which designates portions of the Planning Area as closed to OHVs and does not permit any cross-country OHV travel. Because alternatives D and E would provide fewer restrictions on livestock grazing and OHV travel, impacts on cultural resources from these activities may be greater under these two alternatives. Alternative E would reduce potential impacts on cultural resources from OHV travel in the Little Desert OHV open area, as the open area would include 116 acres under Alternative E, compared to 2,528 acres under Alternative D. The 2002 Brigham Young University cultural resources survey documented numerous archaeological sites within the Little Desert area (BYU 2002), and the smaller OHV open area under Alternative E would reduce potential impacts on archaeological sites in the Little Desert area compared to Alternative D.

The BLM would develop cultural resource management plans under each of the four action alternatives in accordance with the standards of BLM Manual 8130, addressing ways to reduce direct impacts and resolve potential conflicts from natural or human-caused deterioration or other resource uses. Such plans will also allocate cultural properties to use categories that correspond to defined management actions, including allocation for public use and interpretation. Adverse impacts on cultural resources could also be mitigated through the designation of cultural properties to use categories such as public, scientific, or traditional use.

The levels of avoidance, minimization, or mitigation required under each alternative would vary based on, among other considerations, the location and degree of use restrictions on mineral development in KEPA, the availability of areas for issuance of new ROW and renewable energy permits in KEPA, the ability to develop range improvements, areas available for livestock grazing, the creation of facilities and infrastructure for OHV use and recreation, and the extent and management of special designations.

Among the action alternatives, Alternative B would result in the fewest potential impacts on cultural resources. Alternative B includes the most proactive management measures designed to limit impacts on cultural and historical resources. For example, 14 ACECs are proposed under Alternative B, and six of these ACECs are defined to protect cultural and historical values. Under Alternative C, only two ACECs would be defined to protect cultural and historical values; no ACECs would be defined to protect cultural values under alternatives D and E. In addition to limiting resource use and development of these areas, the designation of ACECs would benefit cultural resources because these areas would be prioritized for NHPA Section 110 inventories and monitoring. Limiting public access to fragile and damaged cultural resources would also reduce adverse impacts on those resources. Alternatives C, D, and E would allow greater access and development in the Planning Area, which could increase adverse impacts on cultural resources through increased accessibility to cultural resources and associated damage and vandalism that could occur. In general, impacts on cultural resources across the three GSENM units would be similar based on the similar management in the three units.

As noted above, alternatives D and E contain the fewest special designations and restrictions on resource uses and therefore would have the greatest potential impact on cultural resources. However, alternatives D and E may result in greater potential for the identification of new cultural resources. These two alternatives would increase the potential for surface disturbance compared to the other alternatives and therefore may require compliance with Section 106 of the NHPA prior to surface disturbance, which could identify new cultural resource sites. In addition, inventories and identification of cultural sites may reduce adverse cumulative impacts caused by natural processes, as these sites would be brought under appropriate management. However, the identification of cultural resources does not necessarily constitute protection or preservation of cultural resources. Specific protection of cultural sites would be coordinated with the State Historic Preservation Office, potentially affected tribes, and other appropriate parties based on the results of site-specific NEPA and NHPA consultation requirements.

Providing opportunities for science and research, as well as understanding and interpreting cultural resources, is a goal of all alternatives. Management actions common to all the alternatives would have beneficial impacts on cultural resources as the BLM facilitates and engages in the research, outreach, and education efforts detailed in Section 2.3.22, *Science and Monument Advisory Committee*.

Application of cultural resources BMPs identified in Appendix G, *Best Management Practices*, and the development of a cultural resources management plan under the action alternatives would assist in reducing the potential for direct and indirect adverse impacts on cultural resources. Conducting cultural resource inventories as part of NHPA Section 106 compliance would assist in avoiding, minimizing, and mitigating the adverse impacts from BLM-authorized activities in the Planning Area. Conducting NHPA Section 110 compliance activities, such as cultural resources inventory and monitoring, within portions of the Planning Area prone to heavy visitation and OHV use would assist in identifying and avoiding, minimizing, or mitigating

adverse impacts along transportation corridors. Likewise, implementing access restrictions and area closures as a scientific control could limit potential impacts from increased accessibility and associated damage and vandalism of cultural resources.

Impacts on Monument Objects

Several cultural resources are described as "Archaeological, Historical, and Cultural Resources" monument objects within the Grand Staircase, Kaiparowits, and Escalante Canyons Units of GSENM (see Appendix E, *Grand Staircase-Escalante National Monument Objects and Resource Values*). Monument objects, such as Ancestral Puebloan habitations and cliff structures and Archaic-era sites, have the potential to contribute valuable data to the understanding of the prehistory of the region. Other monument objects, such as the Dance Hall Rock and the Old Paria town site and movie set, are associated with westward expansion and historic film production in the region.

The direct and indirect cultural resource impacts and the differences in these impacts across alternatives described above would also generally apply to cultural resource monument objects when monument objects could be affected by the management and associated impacts in GSENM. Similarly, the beneficial impacts and protective measures described above in the direct and indirect analysis of impacts on cultural resources would support the proper care and management of monument objects.

Alternatives A and B would generally result in the least potential for adverse impacts on cultural resource monument objects in GSENM due to decreased potential for resource use and increased protection of other resources that could afford additional protection to cultural resource monument objects. By comparison, alternatives C, D, and E would generally allow greater access and development in GSENM than alternatives A and B, and therefore would have the potential to result in more adverse impacts on cultural resource monument objects than alternatives A and B. However, as described in Appendix J, *Cultural Resources,* and Appendix I, *Monitoring Strategy,* the BLM would monitor areas with increased access and high visitation and areas prone to vandalism and unauthorized camping. If access and activity in these areas indicate potential impacts on monument objects, the BLM would implement access restrictions such as fencing or signage to ensure the proper care and management of monument objects. The BLM would prioritize cultural surveys in high-use areas to identify cultural resources and would implement additional measures to ensure the protection of vulnerable cultural resources and monument objects. In accordance with 43 CFR 8341.2, if increased access and OHV use are causing or will cause considerable adverse effects on cultural resources, the authorized officer would immediately close the areas affected to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures are implemented to prevent recurrence.

All alternatives provide for the proper care and management of monument objects and require application of appropriate BMPs for the protection of cultural resources (e.g., pre-disturbance cultural resource inventories) as identified in Appendix G, *Best Management Practices.* Additionally, appropriate tools for cultural resource site protection identified in Appendix J, *Cultural Resources,* and monitoring strategies for cultural resources described in Appendix I, *Monitoring Strategy,* would ensure the proper care and management of monument objects. Under all action alternatives, the BLM will develop a cultural resource management plan and cultural resource monument objects will be assigned use categories, such as public, scientific,

and traditional use. The criteria in Appendix J, *Cultural Resources,* will be used to assign cultural sites and cultural resource monument objects to the appropriate classifications.

Under all action alternatives, Dance Hall Rock within the GSENM Kaiparowits Unit will be assigned to the public use category. In addition, alternatives B, C, D, and E would designate a SRMA or RMZ that includes Dance Hall Rock. Actively managing the Dance Hall Rock area as an SRMA or RMZ and allocating this area to the public use category may increase the potential for public access to Dance Hall Rock. Increased access may result in greater impacts on cultural resources in the vicinity of Dance Hall Rock. However, actively managing Dance Hall Rock as an SRMA/RMZ (e.g., focusing camping in developed campgrounds and designated camping areas) could provide increased management focus and resources to reduce potential user conflicts that could affect monument objects. In addition, the previously mentioned cultural resource site protection tools, monitoring strategies, and application of access restrictions would ensure the proper care and management of the Dance Hall Rock monument object.

Native American Use of Lands and Concerns

The BLM consults with Native American groups to identify and preserve traditional and cultural practices and places within the Planning Area. As part of the consultation process, the BLM and Native American groups identify traditional practices and places that would be affected by management. The BLM will continue consultation with Native American groups to refine the understanding and analysis of potential impacts.

In general, alternatives A and B would provide greater potential than alternatives C, D, and E for protecting natural and historic resources important to Native Americans through increased special designations, allocations, and management that would preserve natural and historic resources important to Native Americans.

All action alternatives would allow for Native American collection of vegetation and forest products for traditional uses, but with variation in permit requirements. Alternative A does not include any permit requirements for the non-commercial collection of vegetation, forest, and woodland products for Native American traditional uses or for personal use. Alternative B would allow non-commercial traditional use of vegetation, forest, and woodland products for traditional, religious, or ceremonial purposes without a permit but would require a free permit for personal collection. Alternative C would require a free permit for non-commercial traditional use. Alternatives D and E would allow non-commercial traditional use of vegetation, forest, and woodland products without a permit. Non-commercial personal use collection of vegetation, forest, and woodland products is not permitted under alternatives C, D, and E.

Application of cultural resources BMPs identified in Appendix G, *Best Management Practices*, would assist in reducing the potential for direct and indirect adverse impacts on Native American religious and traditional/cultural places through compliance with Section 106 and Section 110 of the NHPA, as well as compliance with the American Indian Religious Freedom Act.

3.2.2.3 Cumulative Impacts

The cumulative impacts analysis area for cultural resources is the Planning Area plus a 15-mile buffer, which includes lands administered by the NPS. This area encompasses cultural resources that could be directly affected by surface-disturbing activities as well as the viewshed

of historic trails that could be affected by cumulative impacts. Direct and indirect impacts of each action alternative, when considered in conjunction with past, present, and reasonably foreseeable future actions (e.g., authorized surface-disturbing activities from mineral leasing, transportation management, recreational development, grazing, and renewable energy), would result in cumulative adverse impacts on cultural resources within the Planning Area (Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*). Reasonably foreseeable future actions that result in surface disturbance are most likely to contribute to cumulative impacts, including the Lake Powell pipeline, Garkane Transmission line, buried fiber optic lines, and reasonably foreseeable mineral development projects in the analysis area including the Alton Coal Tract.

The development and improvement of transportation corridors managed by the BLM and adjacent landowners would result in increased visitation to previously difficult to access portions of the Planning Area. Increased and unmonitored visitation would result in higher risk of unauthorized artifact collection, looting, vandalism, and destruction of cultural resources. Implementing restrictions on public access to areas with fragile or dense cultural resources would assist in mitigating adverse impacts related to increased visitation. Alternative B would have the greatest likelihood of reducing potential cumulative impacts on cultural resources, while alternatives D and E would place fewer restrictions on activities that could affect cultural resources and increase potential for access.

3.3 Fish, Wildlife, and Special Status Species

3.3.1 Affected Environment

The analysis area for fish, wildlife, and special status species is the Planning Area.

3.3.1.1 Fish and Wildlife

Complex geography and the availability of surface water have a major influence on the fish and wildlife communities in the Planning Area. There have been 15 species of fish, 350 species of birds, 29 species of amphibians and reptiles, 82 species of mammals (including 16 species of bats), and 650 species of bees and other pollinators documented in the Planning Area (BLM 2018b; Messinger 2006). Refer to Chapter 2, Section 2.2.5, *Fish and Wildlife* (pages 39–47), in the AMS (BLM 2018b) for descriptions of the general fish and wildlife species present in the Planning Area.

The Planning Area is situated in a dry desert climate so the majority of surface streams and washes are intermittent or ephemeral, flowing only after precipitation events. The Paria and Escalante Rivers are the two major drainages in the Planning Area. Most of the mainstem Paria River within the Planning Area flows on a perennial basis, with small reaches near the upper and lower extremities of the river within the monument that are typically dry (Utah DEQ 2004). The flowing reaches are fed by subsurface flows, springs, and other groundwater expressions, and by bank storage after high flows (BLM 1999a). The Paria River system supports an assemblage of warm-water fish species, though the speckled dace is the only native species that has been verified in the system. The Escalante River has perennial flows within GSENM and has cold-water and warm-water habitats that support five native species: speckled dace, flannelmouth sucker, bluehead sucker, roundtail chub, and Colorado River cutthroat trout (though Colorado River cutthroat trout are limited to the cooler waters upstream of the Planning Area). Opportunities for restoration of native fish species exist in the tributaries of the

Escalante River, such as Calf Creek (BLM 2018b). Refer to Appendix P, *Water Resources,* for additional information on perennial, ephemeral, and intermittent waterways in the Planning Area.

A mosaic of habitats in varying successional stages is necessary to accommodate the needs of all wildlife in the Planning Area. Major habitat types for wildlife in the Planning Area include desert shrub, sagebrush/grassland steppe, pinyon-juniper woodlands, oak/mountain shrub, ponderosa pine, aspen, riparian/wetland, and non-vegetated/rock outcrop. Refer to Appendix 4, *Fish and Wildlife* (pages 263–268), in the AMS (BLM 2018b) for descriptions of the wildlife habitats that are present in the Planning Area.

Game species are an important aesthetic and economic resource in the Planning Area. The Utah Division of Wildlife Resources (UDWR) is responsible for managing wildlife populations in Utah; the BLM is a partner in managing the diverse habitats that sustain these wildlife populations. The Planning Area includes UDWR game management units 25c/26 (Boulder/Kaiparowits Plateau) and 27 (Paunsaugunt). Game species in the Planning Area include desert bighorn sheep, mule deer, pronghorn, elk, upland game birds, mountain lion, bear, and furbearers (i.e., bobcats, raccoons, badgers, weasels, and beavers). Crucial habitats have been identified for several big game species based on various species' requirements such as winter range and lambing areas (Map 3). Refer to Chapter 2, Section 2.2.5, *Fish and Wildlife* (pages 39–47), and Appendix 4, *Fish and Wildlife* (pages 263–268), in the AMS (BLM 2018b) for information on big game populations in the Planning Area.

In addition, big game are known to utilize portions of the Planning Area for seasonal migrations, including a migration corridor along Highway 89 that is used by the Paunsaugunt mule deer herd, UDWR Herd Management Unit 27 (Map 3). The Paunsaugunt herd had a short-term population target of 5,200 wintering deer in 2015 (UDWR 2015) and the Highway 89 mule deer migration corridor provides connectivity between summer grounds on the Paunsaugunt Plateau and wintering grounds near Buckskin Mountain and the habitat in the corridor is mapped by UDWR as mule deer crucial winter habitat (Cramer 2018; Messmer and Klimack 1999). Mule deer utilize this migration corridor from October through April, with the primary fall migration occurring from October through December. UDWR, Utah State University, the Utah Department of Transportation, and other entities have conducted a variety of studies demonstrating the importance of this migration corridor for the Paunsaugunt mule deer herd and a variety of fencing and wildlife crossing structures have been installed along the migration corridor to improve migration success and reduce wildlife-vehicle collisions (Cramer 2018; Messmer and Klimack 1999). Recent monitoring of the Highway 89 mule deer migration corridor recorded 25,905 observations of mule deer moving back and forth through wildlife crossing structures during the 2017/2018 annual migration period (Cramer 2018).

Federal agencies are required to consider the effects that planned or authorized activities will have on migratory birds and their habitats, and to consider migratory birds in their land use planning efforts. The Planning Area includes important breeding and wintering habitats for migratory and non-migratory (resident) birds, including habitat for upland game species such as chukar. The Coordinated Implementation Plan for Bird Conservation in Utah (Utah Steering Committee Intermountain West Joint Venture 2005) identified portions of two Bird Habitat Conservation Areas that occur in the Planning Area: Paria River and Escalante River. The Planning Area is located in Bird Conservation Region 16 (Southern Rockies/Colorado Plateau) as delineated by the North American Bird Conservation Initiative; the BLM has identified 17

species from the USFWS's *Birds of Conservation Concern 2008* (USFWS 2008) that have the potential to occur in the Planning Area. Refer to Appendix 4, *Fish and Wildlife* (page 263), in the AMS (BLM 2018b) for more information on birds of conservation concern.

Research has shown that that the Planning Area has a very high diversity of insect pollinators; over 650 species of bees were documented during one long-term study, including many unique species that have not been found elsewhere (Messinger 2006). Bees and other insect pollinators play a critical role in supporting ecosystem health by helping plants reproduce. Flowering plants rely on these insects (e.g., bees, butterflies, wasps) and other pollinators (e.g., birds, small mammals) to maintain their populations, and many agricultural crops also require pollination by insects. Pollinators play a critical role in sustaining the many endemic plant species that occur in the Planning Area; there are about 125 species of plants in GSENM that occur only in Utah or on the Colorado Plateau, and 11 species of plants in GSENM are found nowhere else (BLM 2018b).

3.3.1.2 Special Status Species

Special status species include federally listed threatened and endangered species, State-listed species, and sensitive species designated by the BLM Utah State Director that may require specific management attention as a result of population or habitat concerns.

The BLM objectives for special status species management are to (1) conserve and/or recover Endangered Species Act (ESA)-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species, and (2) initiate proactive conservation measures that reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing of these species under the ESA (BLM 2008a). Refer to Chapter 2, Section 2.2.10, *Special Status Species (Threatened, Endangered, and Sensitive)* (pages 58–68), in the AMS (BLM 2018b) for more information on special status designations and BLM policies regarding special status species management.

There are five plant species and four bird species that have been federally listed as threatened or endangered under the ESA that have been documented or could potentially occur in the Planning Area, according to the USFWS. There are no species that are proposed for ESA listing or candidates for ESA listing in the Planning Area. Critical habitat has been designated for two ESA-listed bird species, the Mexican spotted owl (MSO) and southwestern willow flycatcher, and portions of these designated critical habitats extend into the Planning Area (Map 4). Refer to Chapter 2, Section 2.2.10, *Special Status Species (Threatened, Endangered, and Sensitive)* (pages 58–68), and Appendix 6, *Special Status Species* (pages 307–314), in the AMS (BLM 2018b) for more information on threatened and endangered species and their designated critical habitats in the Planning Area.

BLM sensitive species and Utah State-listed species that have been documented or could potentially occur in the Planning Area include 12 plants, 8 birds, 6 mammals, 1 amphibian, 2 reptiles, and 3 fish. Refer to Chapter 2, Section 2.2.10, *Special Status Species (Threatened, Endangered, and Sensitive)* (pages 58–68), in the AMS (BLM 2018b) for more information on BLM sensitive species and Utah State-listed species in the Planning Area. Refer to UDWR's Utah Conservation Data Center website (https://dwrcdc.nr.utah.gov/ucdc/) and the Kanab Field Office RMP (BLM 2008b) for additional information on species' life histories, distribution, and abundance.

There are five special status species (i.e., greater sage-grouse, northern goshawk, bluehead sucker, flannelmouth sucker, and roundtail chub) in the Planning Area that are managed under multi-agency conservation plans. The greater sage-grouse is managed under a conservation plan that was finalized in 2013 (Utah Governor's Office 2013); conservation measures for sage-grouse were incorporated into BLM RMPs by the 2019 *Utah Greater Sage-Grouse Approved Resource Management Plan Amendment and Record of Decision* (BLM 2019a). There is one designated Sage-grouse Management Area (SGMA) that extends into the Planning Area, the Panguitch SGMA. There are 23,654 acres of designated SGMA in the Planning Area, including 7,941 acres in KEPA and 15,713 acres in GSENM (Map 4). All 23,654 acres of designated SGMA within the Planning Area are identified as Priority Habitat Management Areas; there are no General Habitat Management Areas in the Planning Area. The northern goshawk is managed under a conservation agreement that was signed in 1998. The three BLM sensitive fish species are managed under a conservation plan that was finalized in 2006 (UDWR 2006). These BLM sensitive fish species are present only in the Escalante Canyons Unit.

3.3.2 Fish and Wildlife Environmental Consequences

3.3.2.1 Methods and Assumptions for Fish, Wildlife, and Special Status Species

This section describes direct, indirect, and cumulative effects on fish, wildlife, and special status species from implementation of the management alternatives. Impacts on fish, wildlife, and special status species would primarily result from the following impact mechanisms:

- Surface disturbance and vegetation removal that results in the degradation, loss, or fragmentation of habitat
- Disturbance/displacement that alters habitat use, breeding, and/or survival
- Habitat quantity and/or quality improvements that are achieved through vegetation treatments and other habitat restoration activities

Effects on fish, wildlife, and special status species from these impact mechanisms are generally described in a qualitative fashion, with acreages provided where appropriate to draw distinctions among the alternatives.

This analysis uses the following assumptions:

- The methodology for assessing potential impacts on fish, wildlife, and special status species often relies on the evaluation of impacts on wildlife habitats as a surrogate for individual species that may not have mapped distributions in the Planning Area or available habitat suitability models that would allow for quantitative assessment. Species are assumed to be potentially present where suitable habitats may occur in the Planning Area. In reality, many species, particularly those that are rare and endemic, are not evenly distributed across the landscape due to the more localized occurrence of the specific habitat features or conditions on which they rely.
- KEPA is expected to be subject to a broader range of uses, and in some cases more intensive use, than is currently allowed in GSENM. Under Presidential Proclamation 9682, these uses would specifically include (1) entry, location, selection, sale, or other disposition under the public land laws, (2) disposition under all laws relating to mineral and geothermal leasing, and (3) location, entry, and patent under the mining laws. Even without the monument designation, it is anticipated that existing protections for fish, wildlife, and

special status species under current BLM policies (e.g., implementation of the USFWS Utah Field Office Guidelines For Raptor Protection From Human And Land Use Disturbances) and Federal regulations such as the ESA would continue to be incorporated in permit and ROW stipulations for these lands, such that there would be a similar level of protection to that which currently exists for lands within GSENM.

- The effects of management actions on fish, wildlife, and special status species can vary widely depending on a variety of factors such as the type, extent, and frequency of any associated disturbance; time of year; population status (e.g., number of individuals in an affected population); habitat conditions; and environmental conditions such as drought that may exacerbate the effects of habitat alteration or disturbance/displacement from allowed activities.
- Consultation with the USFWS under Section 7 of the ESA would be undertaken for any actions that have the potential to affect federally listed species or their designated critical habitats. Under all alternatives, no decision would be approved or authorized on BLM-administered surface lands that would jeopardize the continued existence of special status species that are listed as threatened, endangered, proposed, or candidates for listing as threatened or endangered. Implementation of the special status species program is directed at preventing the need for listing proposed or candidate species under the ESA, protecting special status species, and improving their habitats to a point where their special status recognition is no longer warranted.

3.3.2.2 Direct and Indirect Effects

Management that allows removal, degradation, fragmentation, or disturbance to wildlife habitat in the Planning Area is generally considered adverse. Beneficial impacts would result from management that conserves or improves habitat conditions and results in increased sustainability of wildlife populations.

Recreation, mineral development in KEPA, renewable energy development in KEPA, livestock grazing, lands and realty actions, extraction of forestry and woodland products, and transportation would result in short- and long-term, direct, adverse impacts on fish and wildlife resources through surface disturbance, habitat alteration, and disturbance/displacement of fish and wildlife. Management decisions that allow habitat loss, fragmentation, and degradation could result in long-term impacts such as the extirpation of a species from an area where it once thrived. In contrast, management designed to improve habitats, such as vegetation treatments, fuels treatments, fish and wildlife habitat management, and soils and watershed enhancement activities, would cause habitat alteration and disturbance/displacement of fish and wildlife in the short term, but would result in long-term direct and indirect, beneficial impacts on fish and wildlife.

Management decisions and allocations that would limit the potential adverse effects on fish and wildlife by instituting constraints on resource uses include special designations (e.g., ACECs that limit surface disturbance for the protection of specific resource values) and designation of recreation management areas (e.g., SRMAs and RMZs that limit surface disturbance to meet recreation objectives). Management of lands with wilderness characteristics that limits surface disturbance, promotes activities to preserve naturalness and outstanding opportunities for solitude, and implements resource-/area-specific protective closures or buffers (e.g., seasonal restrictions in crucial winter range or lambing areas, temporary closures near raptor nests, restrictions on development in suitable or occupied habitats for special status species) would

also limit the potential adverse effects on fish and wildlife through constraints on resource use. Potential impacts on fish and wildlife would generally fall within the categories of habitat degradation/loss/fragmentation, disturbance/displacement (which could affect individual animals or entire populations), and habitat improvement (e.g., vegetation treatments and other habitat restoration activities).

Impacts from Habitat Degradation/Loss/Fragmentation

Surface-disturbing activities, and where they are allowed and restricted, serve as primary indicators of impacts on fish and wildlife because these activities may alter wildlife habitats through the direct loss of vegetation that is used for sheltering, breeding, and foraging. The alteration of soils or vegetation communities that results in degraded habitat conditions, such as the introduction or spread of nonnative or invasive species, may also have long-term impacts. Fragmentation of wildlife habitats may reduce their suitability, reduce productivity, increase predation during the breeding season (e.g., many birds rely on patches of dense vegetation to hide their nests), and/or preclude seasonal or adaptive movements that would allow animals to avoid harsh environmental conditions.

Impacts on pollinators would primarily be associated with surface-disturbing activities that remove vegetation, alter vegetation communities, and/or disturb native soils, resulting in the loss or fragmentation of foraging and nesting habitat. The introduction and spread of nonnative plant species can disrupt the existing relationships between pollinators and their native host plants. In general, bees and other insect pollinators are highly specialized and have co-evolved with specific plant hosts, which may make them less adaptable to anthropogenic disturbances and changing conditions. Some endemic plants are dependent on only one or a few specialized pollinator species and these plants may be unable to persist in the pollinators' absence; the relationship is mutualistic in that the pollinators also may not survive without their host plant counterparts.

Alternative B, Alternative C, and alternatives D and E progressively increase the acreage of KEPA lands that are open to mineral exploration and development (refer to Table 3-1), with Alternative B having the greatest constraints on mineral development and alternatives D and E having the least constraints. The BLM employs site-specific analysis, BMPs, and mitigation for mineral development or ROWs prior to issuing BLM approval and permits. In general, the potential for impacts on fish and wildlife resources from disturbance and displacement increases commensurate with the area available for mineral development with fewer constraints.

Unlike permitted activities that are subject to site-specific environmental review and monitoring (e.g., oil and gas exploration and development, forestry and woodland harvest), ground-disturbing recreation, such as cross-country OHV use, would have limited reviews following designation of SRMAs and Extensive Recreation Management Areas (ERMAs). These recreation management areas may result in impacts on fish and wildlife habitats as dispersed use increases over time. Although damage to fish and wildlife habitats would continue to be monitored, impacts from dispersed use may not be apparent until after the damage has occurred, which the BLM would then mitigate to the extent practical and feasible. Alternatives A and B incorporate the most restrictions on surface-disturbing activities to protect recreation values, conferring beneficial impacts on fish and wildlife, followed by alternatives C, E, and D, respectively.

Impacts on aquatic habitats (exclusive of the natural fluctuations that occur in arid environments) could include reductions in surface flows; changes in water quality (e.g., pH, dissolved oxygen, temperature, and turbidity); sediment accumulation; and loss of instream habitat features that are important for sheltering, breeding, or foraging (e.g., boulders, riffles, and overhanging vegetation). Buffer areas that protect riparian habitats from development and stricter requirements for the use and reclamation of upland habitats by limiting disturbance in sensitive soils and requiring a greater degree of revegetation during reclamation of disturbed lands may reduce the short- and long-term adverse impacts of surface-disturbing activities. By prohibiting new surface-disturbing activities within 0.5 mile of riparian/wetland areas, Alternative B would reduce adverse impacts on aquatic habitats. Alternatives C, D, and E would likely result in a greater potential for adverse impacts on aquatic habitats by allowing surface-disturbing activities closer to riparian/wetland areas (330 feet), compared to Alternative B.

Impacts associated with livestock grazing management may occur from improper livestock grazing, surface disturbance related to range improvement projects, and vegetation treatments. Livestock grazing in the Planning Area would be managed so that grazed lands meet or make progress toward meeting the applicable standards described in the *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997). Alternative B allocates the fewest acres as available for livestock grazing and the fewest animal unit months (AUMs) compared to Alternative C, Alternative A, and alternatives D and E, respectively (refer to Table 3-1), which allocate more area as available to livestock grazing. Conversely, range improvements (vegetation treatments and water developments) would result in beneficial impacts on wildlife distribution and habitat. In general, impacts on fish and wildlife across the three GSENM units would be similar based on the similar management in each of the units.

In KEPA, the designation of ACECs and other special designations and management of lands for wilderness characteristics would benefit habitat preservation (see Table 3-1). These designations and restrictions on resource uses and disturbance with them support the maintenance of large blocks of wildlands as diverse habitats for native plant, fish, and wildlife species and protecting areas as refuge for species imperiled by habitat loss or degradation. Alternatives C, D, and E would have fewer special designations and fewer areas managed for the protection of wilderness characteristics, increasing potential adverse impacts from habitat loss and fragmentation in these areas compared to alternatives A and B (refer to Table 3-1).

Application of the various BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect adverse impacts on fish and wildlife resources. For example, limiting disturbance at raptor nest sites during the breeding season and implementing protections for special status species would reduce potential impacts on fish and wildlife from a variety of surface-disturbing and disruptive activities. Similarly, applying BMPs for reclamation and restoration would improve the potential for reclamation success, thereby reducing long-term adverse impacts on fish and wildlife habitats.

Impacts from Disturbance and Displacement

Human activity and disturbance can result in impacts on wildlife that can range in severity from temporary noise and visual disturbance associated with light recreational use (e.g., climbing, hiking, horseback riding) to permanent displacement of individual animals or entire populations from frequent heavy use or permanent habitat alterations (e.g., road construction,

trailhead and facility construction, mineral development projects in KEPA). Recreational use, mineral exploration and development in KEPA, and establishing ROWs in KEPA may result in displacement and physiological stress to wildlife from human presence and activity during sensitive life stages. Surface disturbance that would result in habitat degradation or loss may displace animals or interfere with a species' movement patterns by putting them into competition with other animals for resources or forcing them into lower-quality habitats that may not meet their needs for sheltering, breeding, or foraging. Disturbance from human activities causes animals to expend energy in fleeing from or avoiding the disturbance, and has a physiological cost that can be exacerbated during breeding seasons, periods of low food availability, or harsh environmental conditions such as extreme heat, cold, or drought. Chronic or continuous disturbance could result in reduced survival or reproduction.

Recreational activities and uses in the Planning Area have increased substantially over time and have the potential for short- and long-term adverse impacts on fish and wildlife. Continued increases in recreational use without management attention to how and where that recreation occurs may result in further dispersion of recreation users, increasing the potential for wildlife disturbance and displacement. Alternatives A and B include the most targeted management of recreational use (e.g., designation of more SRMAs and RMZs) followed by alternatives C, E, and D, respectively. Under Alternative D, no SRMAs would be designated and the entire Planning Area would be designated as an ERMA with less targeted recreation management than alternatives B, C, and E, which could increase the potential for impacts on wildlife associated with disturbance/displacement from recreation conflicts and uses.

Management specific to fish and wildlife is intended to reduce the potential for human disturbance and displacement that can result in long-term impacts on fish and wildlife populations. Alternative A is generally focused on limiting adverse impacts on wildlife corridors and migration routes, and limiting human access to key forage, nesting, and breeding areas. Alternatives B and C provide more specific management to address important big game habitat, with Alternative B providing the greatest protection from disturbance and displacement during sensitive seasonal and life-cycle periods. Alternative C allows more human activity during sensitive periods and a greater potential for habitat modification, resulting in increased potential for impacts compared to Alternative B. Alternatives D and E generally allow surface-disturbing activities, fence modification and maintenance, travel, and vegetation treatment in big-game crucial seasonal ranges, birthing habitats, and migration corridors on a basis consistent with other resource use restrictions and with the BMPs identified in Appendix G, *Best Management Practices.* However, Alternative E includes a seasonal timing limitation from October 1 to April 30 in the Highway 89 mule deer migration corridor (Map 3), which would prohibit surface disturbance during this time period and reduce impacts on mule deer utilizing this corridor during seasonal migrations compared to the other alternatives.

Impacts from Vegetation Treatments and Other Habitat Restoration Activities

Habitat maintenance and/or improvement would occur as a result of vegetation treatments that reduce soil loss, improve crucial big game habitat, restore ecological function, and increase forage production. Habitat alteration through targeted vegetation treatments sometimes serves to benefit a particular species of concern (or more often a suite of species) but also results in loss of habitat features for other species (e.g., juniper trees that are removed in an area where grassland restoration is under way). However, habitat availability, as it

pertains to a particular vegetation community, is not always a limiting factor for wildlife populations. Food or water availability are also factors that affect carrying capacity for many species, such as predators that rely on the availability of suitable prey species in any given habitat.

There would be increased flexibility for various habitat restoration activities under alternatives B, C, D, and E, compared to Alternative A. Alternatives A and B would place the greatest emphasis on the introduction, transplant, augmentation, and reestablishment of native fish and wildlife species. Alternatives C, D, and E would also allow these activities for naturalized species. Alternatives C, D, and E would specifically allow for the removal of unwanted nonnative wildlife species, which can be an important additional tool for accomplishing restoration goals, with long-term beneficial impacts on native wildlife populations. Alternatives D and E would also allow for habitat restoration and recovery for certain introduced fish and wildlife species in accordance with UDWR species management plans with goals and objectives set forth by UDWR. Habitat treatments and habitat management for the recovery and reestablishment of species on BLM-administered surface land could also result in impacts on fish and wildlife on NPS units adjacent to the Planning Area, especially if treatments and species recovery and reestablishment are not consistent with NPS management and objectives.

The alternatives take differing approaches to managing vegetation and accomplishing restoration. Alternatives A and B emphasize natural processes and the use of native species during reclamation, while alternatives C, D, and E would allow a greater range of vegetation treatment options, which would increase short-term impacts from human activity and habitat modification, but could also increase the potential long-term beneficial impacts by increasing the ability of land managers to effect change in habitat to the benefit of some species. However, the increased potential for resource use and associated surface disturbance and human activity under alternatives C, D, and E would require the BLM to expend greater resources for vegetation treatments and habitat restoration to maintain and improve fish and wildlife habitats as compared to alternatives A and B.

Alternatives D and E would also allow the use of nonnative species where necessary to optimize land health, forage, and productivity in nonstructural range improvements, and Alternative C would allow the use of desirable nonnative species where the probability of success or adapted seed availability is low, or if desirable nonnative species are needed to support ecological objectives. Use of nonnative species could increase the potential for the spread and establishment of these species, which could alter native vegetation communities and wildlife habitat.

Impacts on Monument Objects

A number of fish and wildlife resources are monument objects described as “Biological and Ecological Resources and Processes” within the Grand Staircase, Kaiparowits, and Escalante Canyons Units of GSENM (refer to Appendix E, *Grand Staircase-Escalante National Monument Objects and Resource Values*). These include riparian corridors that provide habitat for neotropical birds, as well as relict plant communities and various microhabitats (i.e., hanging gardens, tinajas, canyon bottom, dunal pockets, salt-pocket, and rock crevice communities) that provide for a diversity of fish and wildlife in GSENM.

The direct and indirect fish and wildlife impacts and the differences in these impacts across alternatives described above would also generally apply to biological and ecological resource

monument objects when the monument objects could be affected by the management and associated impacts in GSENM. Similarly, the beneficial impacts and protective measures described above in the direct and indirect analysis of impacts on fish and wildlife would support the proper care and management of monument objects.

Given the greater protective measures applied to biological and ecological resources under alternatives A and B, and the associated decrease in potential impacts on fish and wildlife as described in the analysis above, alternatives A and B would generally result in the least potential for adverse impacts on biological and ecological resources and their associated fish and wildlife in GSENM. For example, Alternative B would prohibit surface-disturbing activities within 0.5 mile of riparian/wetland areas and would apply a no surface occupancy (NSO) stipulation and ROW avoidance in these areas, which would decrease potential impacts on riparian corridors and associated fish and wildlife compared to alternatives C, D, and E where surface-disturbing activities are avoided within 330 feet of riparian/wetland areas and a controlled surface use (CSU) stipulation is applied.

All alternatives generally limit the extent of surface disturbance in GSENM (e.g., withdrawn from mineral entry), and thus all alternatives are anticipated to support the proper care and management of biological and ecological resource monument objects by limiting new development and disturbance in GSENM. Additionally, all action alternatives require application of appropriate BMPs for the protection of biological and ecological resources as identified in Appendix G, *Best Management Practices* (e.g., controlling noxious weeds, incorporating design and operation stipulations as necessary to protect riparian and aquatic resources), which would provide for the proper care and management of biological and ecological resource monument objects and their associated fish and wildlife species. Additionally monitoring strategies for biological and ecological resources described in Appendix I, *Monitoring Strategy,* would ensure the proper care and management of monument objects (e.g., monitoring riparian conditions for any surface-disturbing activity that could affect riparian areas and prioritizing monitoring in functioning-at-risk and then non-functioning riparian areas).

3.3.3 Special Status Species Environmental Consequences

3.3.3.1 Direct and Indirect Effects

This analysis focuses on impacts on special status species, including federally listed species, and BLM and Utah sensitive species as a result of management that affects individuals or their populations and changes to the condition of their habitats. Although some data on known locations and habitats within the Planning Area are available, the data are neither complete nor comprehensive regarding all special status species known to occur or regarding potential habitat that might exist. Known and potential special status species and habitat locations were considered in the analysis; however, the potential for species to occur outside these areas was also considered and, as a result, some impacts are discussed in more general terms. Impacts on non-special status fish and wildlife species and their habitats are addressed in Section 3.3.2, *Fish and Wildlife Environmental Consequences*.

Special status species and their habitats in the Planning Area would be affected under all of the potential alternatives. Surface-disturbing activities would modify habitat and/or cause loss or gain of special status species individuals depending on the amount of area disturbed, the nature of the disturbance, the species affected, and the location of the disturbance. In general, the nature and type of impacts on special status species would be similar to those on general

fish and wildlife species, as described in Section 3.3.2, *Fish and Wildlife Environmental Consequences*, above. However, impacts on special status species may be of more consequence, as these species typically exhibit limited distributions and relatively low population numbers, compared with common fish, wildlife, and plant species. The impact analysis in this section builds upon, rather than repeats, the analysis included in Section 3.3.2, *Fish and Wildlife Environmental Consequences*, above.

Impacts from Habitat Degradation/Loss/Fragmentation

Special status bird habitat and designated critical habitat for southwestern willow flycatchers and MSOs occurring in various portions of the Planning Area could be affected by human activity and surface-disturbing activities.[1] Potential impacts on riparian areas may affect habitat for species such as southwestern willow flycatcher and yellow-billed cuckoo, while disturbance and activities in canyon areas may affect MSO and California condor habitat. Surface disturbance and human activity (e.g., noise) in sagebrush communities may affect greater sage-grouse and their habitat.

BMPs that would protect special status bird habitats under all alternatives are included in Appendix G, *Best Management Practices*. Examples of these BMPs include restricting permanent surface disturbances within 0.5 mile of suitable southwestern willow flycatcher habitat and prohibiting surface-disturbing projects or activities within 0.5 mile of MSO nests unless USFWS consultation shows no impacts would occur. Additionally, Alternative B prohibits surface-disturbing activities within 0.25 mile of suitable habitat for southwestern willow flycatcher and yellow-billed cuckoo during the breeding season, while Alternative C only prohibits surface-disturbing activities within 0.25 mile of occupied breeding habitat during the breeding season. Alternative D allows surface-disturbing activities within occupied breeding habitats during the breeding season if site-specific analysis and consultation with USFWS determine that the activity would not adversely affect these species or their habitats.

Habitat for special status fish species, such as bluehead sucker, flannelmouth sucker, and roundtail chub, may be affected when aquatic habitat in the Escalante Canyons Unit (i.e., Escalante River) is affected. A BMP included in Appendix G, *Best Management Practices,* that would prohibit the use of chemical substances that may affect downstream habitat for the Colorado pikeminnow and the razorback sucker would protect downstream habitat for these species (and consequently for other special status fish species, as well) under all alternatives. Alternative B provides the greatest protection by prohibiting new surface-disturbing activities within 0.5 mile of special status fish habitat, followed by Alternative C, which avoids surface-disturbing activities within 330 feet of special status fish habitat unless impacts are adequately mitigated and the action would benefit the species and/or habitat. Alternatives D and E would allow surface-disturbing activities in special status fish habitat after site-specific analysis and consultation with the USFWS.

Habitat for a variety of special status plants, including listed species such as Kodachrome bladderpod that occurs in the Kaiparowits Unit and Ute ladies'-tresses that occurs in the Kaiparowits and Escalante Canyons Units, may be affected by surface-disturbing activities or disruptive activities (such as OHV use and livestock grazing). BMPs that would protect special status plant habitats under all alternatives are included in Appendix G, *Best Management*

[1] Specific types of impacts from surface-disturbing activities are discussed in more detail in Section 3.3.2, *Fish and Wildlife Environmental Consequences*, above.

Practices. These BMPs include prohibiting surface-disturbing projects or activities in identified special status species populations and measures to close areas if necessary to protect special status plant species. Surface-disturbing activities and construction of new trails would have the most impact on special status plant habitat under alternatives D and E, with fewer impacts under alternatives A, B, and C, respectively. Construction of recreation facilities (e.g., trails, parking lots) and permitting of communication sites, utility ROWs, and road ROWs would have lower potential for adverse impacts on special status plant habitat under Alternative C as compared to alternatives D and E, and even fewer impacts under alternatives A and B. Surface-disturbing restoration activities after fires would have greater potential for short-term impacts under alternatives C, D, and E as compared to alternatives A and B, but greater potential for long-term beneficial impacts on special status species preferring more open habitat types or earlier seral stages.

Livestock grazing is authorized under all alternatives at varying levels. Special status plant communities are typically isolated in the Planning Area and potential direct impacts on special status plants from livestock grazing are typically minimal due to preferences of cattle to graze on grass, application of BMPs, and the potential for the BLM to modify the terms and conditions of livestock grazing permits, typically during the permit renewal process, to minimize impacts on special status plants as needed.

Habitat for BLM sensitive amphibians, reptiles, and mammals may be affected in a similar manner as described above; however, no federally listed amphibians, reptiles, or mammal species are known to be present in the Planning Area. As such, specific BMPs for these types of species and their habitats have not been developed, though general BMPs for special status species afford protection to these species (refer to Appendix G, *Best Management Practices*). For example, general BMPs include avoiding, controlling, or regulating surface-disturbing activities on a case-by-case basis to minimize impacts on identified crucial habitat for special status species and co-locating communication and other facilities to avoid or reduce fragmenting special status species habitat.

In general, impacts on special status species habitats across the three GSENM units would be similar based on similar management in each of the units.

Impacts from Disturbance/Displacement

Human activity and disturbance can result in impacts on wildlife as discussed in detail in Section 3.3.2, *Fish and Wildlife Environmental Consequences*. Continued increases in visitation and recreation without management attention to how and where that recreation occurs may result in further dispersion of recreation users, increasing the potential for special status wildlife species disturbance and displacement. Alternatives B and C include the most intensive management of recreational use (e.g., designation of more SRMAs and RMZs and application of management zones), followed by alternatives A, E, and D, respectively. Under Alternative D, no SRMAs would be designated and the entire Planning Area would be designated as an ERMA with less targeted recreation management than alternatives B, C, and E.

Alternative A generally limits potential impacts on key foraging, nesting, and breeding areas from development due to monument protections afforded across the Planning Area. Alternative B prohibits surface-disturbing activities during sensitive seasons, while Alternative C allows permanent facilities and surface-disturbing and disruptive activities during sensitive seasons

under certain conditions. Alternatives D and E allow surface-disturbing activities in special status species habitats subject to BMPs and mitigation.

BMPs that would protect special status species from disturbance under all alternatives are included in Appendix G, *Best Management Practices*. Examples of these BMPs include taking appropriate actions to prevent trampling of special status plants, prohibiting designation of climbing areas within known special status raptor species nesting areas, and ensuring project designs incorporate measures to avoid direct disturbance to special status species populations and suitable habitats where possible.

Impacts from Vegetation Treatments and Other Habitat Restoration Activities

Alternatives B, C, D, and E would provide for increased flexibility to conduct various habitat restoration and wildlife augmentation activities, which could provide greater long-term beneficial impacts on special status species than Alternative A. Refer to the discussion of impacts on general fish and wildlife from vegetation treatments and other habitat restoration activities above for more information.

Alternatives A and B emphasize natural processes and the use of native species during reclamation and, given that these alternatives would result in less surface disturbance, they would generally increase the potential for beneficial impacts on special status species. Alternatives C, D, and E allow a greater range of vegetation treatment options, which could increase the potential for long-term beneficial impacts on some special status species, but a greater potential for surface disturbance and human activity under alternatives C, D, and E would result in additional opportunities for new or expanding infestations of nonnative invasive species as compared to alternatives A and B.

Impacts on Monument Objects

Several special status species habitats are monument objects identified as "Biological and Ecological Resources and Processes" within the Grand Staircase, Kaiparowits, and Escalante Canyons Units of GSENM (refer to Appendix E, *Grand Staircase-Escalante National Monument Objects and Resource Values*). Specific objects identified include the Paria River and special status species habitats in such places as Fiftymile Mountain and Wahweap.

The direct and indirect special status species impacts and the differences in these impacts across alternatives described above would also generally apply to biological and ecological resource monument objects associated with special status species. Similarly, the beneficial impacts and protective measures described above in the direct and indirect analysis of impacts on special status species would support the proper care and management of monument objects.

Given the greater protective measures applied to biological and ecological resources under alternatives A, B, and C, and the associated decrease in potential impacts on special status species as described in the analysis above, alternatives A, B, and C would generally result in the least potential for adverse impacts on biological and ecological resources and their associated special status species in GSENM. For example, alternatives A, B, and C would prohibit new ROWs and communication sites in special status species habitat, which would reduce potential impacts on special status species and their habitat compared to alternatives D and E where new ROWs and communications would be avoided in these areas. Alternatives A, B, and C also

generally apply more special status species–specific protective management compared to alternatives D and E, including increased restrictions on development in habitat for MSO, yellow-billed cuckoo, and southwestern willow flycatcher.

Special status species habitats at such places as Fiftymile Mountain and Wahweap would be protected under all alternatives from surface-disturbing and disruptive activities. The most protection would be provided under Alternative B, which typically prohibits surface disturbance in these areas. Alternatives C, D, and E would allow surface disturbance in these special status species habitats with the implementation of BMPs, and alternatives D and E would allow surface-disturbing activities across the greatest portion of GSENM. However, all alternatives generally limit the extent of surface disturbance in GSENM (e.g., withdrawn from mineral entry), and thus all alternatives are anticipated to provide the proper care and management of biological and ecological resource monument objects and associated special status species by limiting new development and disturbance in GSENM.

All action alternatives require application of appropriate BMPs for the protection of special status species as identified in Appendix G, *Best Management Practices* (e.g., requiring pre-disturbance clearance surveys, avoiding/prohibiting development in critical habitat) as well as the committed conservation and protection measures for federally listed species in the GSENM-KEPA Biological Opinion. Application of BMPs and committed conservation and protection measures would provide for the proper care and management of biological and ecological resource monument objects and their associated special status species. Additionally, monitoring strategies for biological and ecological resources described in Appendix I, *Monitoring Strategy,* would ensure the proper care and management of monument objects (e.g., applying USFWS survey and monitoring protocols for special status species). Also, in accordance with Section 7 of the ESA, during site-specific permitting the BLM would ensure that actions that are authorized, funded, or carried out would not be likely to jeopardize the continued existence of a listed species or modify or destroy its designated critical habitat.

3.3.4 Cumulative Effects

The cumulative impacts analysis area for fish, wildlife, and special status species varies by species. Analysis areas for big game species are composed of game management units that intersect the Planning Area. For aquatic species, including special status fish, the cumulative impacts analysis area extends outside the Planning Area, following boundaries of the watersheds that completely or partially overlap it. For migratory birds and non-big game terrestrial wildlife species, the cumulative impacts analysis area is the Planning Area. These areas include the documented home range or foraging territories of species or groups of species that are present or have suitable habitat in or adjacent to the Planning Area and that may experience direct or indirect effects from management actions. Cumulative impacts on fish, wildlife, and special status species are linked to those described for vegetation, as vegetation communities provide habitat for wildlife and can affect habitat for fish (e.g., riparian vegetation).

Past, present, and reasonably foreseeable future actions and conditions within the cumulative impacts analysis areas would have varying beneficial and adverse impacts on fish, wildlife, and special status species. In general, resource use activities have caused habitat degradation and loss, habitat fragmentation, noise, increased human presence, and the spread of invasive species; conversely, land use planning efforts, along with vegetation management and habitat

restoration activities, have countered these adverse impacts to some degree by improving habitat connectivity, plant productivity, vegetation diversity, and ecosystem health. Past actions, including Federal land acquisitions and designation of GSENM/Glen Canyon NRA, along with management actions resulting from subsequent comprehensive planning efforts (e.g., BLM and county management plans, Kane and Garfield County general plans, livestock grazing plans) have established and increased protections for fish, wildlife, and special status species throughout the cumulative impacts analysis area.

Ongoing management for fish, wildlife, and special status species by the BLM, UDWR, and NPS include the dedication of resources for maintaining and restoring habitats, and the consideration of these resources during review and approval of discretionary actions. These actions are critical to maintaining healthy and sustainable populations given the increasing levels of development, recreation, and resource use that are anticipated.

Reasonably foreseeable future actions that would affect fish, wildlife, and special status species in the cumulative impacts analysis areas include utility ROWs (e.g., Lake Powell pipeline) and mineral development projects (e.g., Alton Coal Tract) that would contribute to short-term and long-term habitat degradation, loss, and fragmentation, as well as short-term disturbance and displacement during construction and maintenance activities. Recreation site improvements (e.g., Calf Creek recreation site improvements) and development of recreation management plans to address specific activities such as climbing and canyoneering would contribute to long-term, adverse impacts by supporting recreational activities that could affect fish, wildlife, and special status species. However, these recreational management plans would also have some beneficial impacts due to additional restrictions that would be enforced for some activities/locations and the provision of facilities such as shade structures or parking areas that would reduce the dispersed use of natural areas by recreationists.

BLM management that increases the potential for resource uses (e.g., minerals) and associated activity in the Planning Area would incrementally contribute to adverse cumulative impacts on fish, wildlife, and special status species. Fewer restrictions and increased development under alternatives D and E, when combined with other land uses and past, present, and reasonably foreseeable future actions, would result in adverse cumulative impacts on fish, wildlife, and special status species within the cumulative impacts analysis areas. Management actions associated with alternatives A, B, and C would incrementally contribute to adverse cumulative effects on fish, wildlife, and special status species to a lesser degree than alternatives D and E due to the additional restrictions on surface-disturbing activities and other resource uses under these alternatives. However, the effects of alternatives A, B, and C, when combined with other land uses and past, present, and reasonably foreseeable future actions, would also result in adverse cumulative impacts on fish, wildlife, and special status species within these resources' cumulative impacts analysis areas.

3.4 Lands with Wilderness Characteristics

3.4.1 Affected Environment

The analysis area for this resource is lands with wilderness characteristics in the Planning Area. Lands with wilderness characteristics are defined and considered according to direction in BLM Manuals 6310 and 6320 (BLM 2012b, 2012c). Indicators for lands with wilderness characteristics are sufficient size, naturalness, outstanding opportunities for primitive and unconfined recreation, outstanding opportunities for solitude, and/or any identified

supplemental values (BLM 2012b). Interest in wilderness resources throughout the Planning Area has local, regional, and national significance.

The 1999 Utah Wilderness Inventory conducted by the BLM identified approximately 482,000 acres outside of existing Wilderness Study Areas (WSAs) as lands with wilderness characteristics within the Planning Area (BLM 1999b). In 2018, the BLM updated the lands with wilderness characteristics inventory to support this planning effort (BLM 2018d) and in 2019 the BLM updated lands with wilderness characteristics inventories on approximately 53,000 acres (BLM 2019d) (Map 5). In addition to the inventoried lands with wilderness characteristics (BLM 1999b, 2018d, 2019e), there are 86 former Utah School and Institutional Trust Lands Administration (SITLA) sections totaling approximately 54,449 acres that are completely surrounded by WSAs within the Planning Area. The BLM concluded there is a reasonable probability that these 86 SITLA sections (i.e., approximately 54,449 acres) generally contain the same apparent naturalness and outstanding opportunities for solitude or primitive and unconfined recreation as the surrounding WSAs (BLM 2018b). Therefore, in total, lands with wilderness characteristics encompass approximately 559,521 acres of the Planning Area. Refer to Chapter 2, Section 2.2.7, *Lands with Wilderness Characteristics*, Table 13 (pages 48–50), and Appendix 1 (*Maps*), Map 6 (page 218), in the AMS (BLM 2018b) for more information on lands with wilderness characteristics in the Planning Area.

3.4.2 Environmental Consequences

3.4.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on lands with wilderness characteristics within the Planning Area from implementation of the management alternatives. Map 6, Lands with Wilderness Characteristics Alternative B, and Map 7, Lands with Wilderness Characteristics Alternative C, depict areas that would be managed for protection of wilderness characteristics under the alternatives. Impacts on lands with wilderness characteristics would primarily result from the following impact mechanisms:

- Mineral management and mineral potential development in KEPA
- ROWs and/or renewable energy development in KEPA
- Vegetation treatments
- OHV use

Effects on lands with wilderness characteristics from these impact mechanisms are generally described in a qualitative fashion, with acreages provided where appropriate to draw distinctions among the alternatives.

This analysis uses the following assumptions:

- Public interest in the BLM's inventory determinations, as well as management actions for these areas, has increased in the past 20 years and is expected to increase in the future.
- As areas that contain wilderness characteristics become more limited, pressure for preservation of these areas is expected to increase. Outstanding opportunities for solitude or primitive and unconfined recreation would become increasingly important to residents of and visitors to the area as visitation increases. Conflict between development interests and preservation interests is expected to increase, as well (BLM 2018b).

- Scenic resources contributing to lands with wilderness characteristics would be increasingly important as visitation increases.

3.4.2.2 Direct and Indirect Effects

Adverse impacts on lands with wilderness characteristics occur when one or more components (e.g., size, naturalness) of wilderness characteristics are diminished. Adverse impacts are reduced when components of wilderness characteristics are preserved or improved. Surface-disturbing activities and other resource uses could result in short- and long-term (depending on the extent and intensity of the disturbance) adverse impacts on lands with wilderness characteristics. Activities such as ROW and mineral development would introduce activities or disturbances that could adversely affect the natural conditions in these areas over the short and long term.

Lands with wilderness characteristics that are managed to protect, preserve, or maintain their wilderness characteristics would generally prevent authorization of most activities that would adversely affect those characteristics. In areas managed for protection of wilderness characteristics, authorization of most activities that would adversely affect wilderness characteristics are prohibited. As shown in Table 3.4-1, only alternatives B and C specifically manage lands with wilderness characteristics to protect, preserve, or maintain their wilderness characteristics.

Table 3.4-1. Acres Managed for Wilderness Characteristics

Alternative	Grand Staircase Unit (acres)	Kaiparowits Unit (acres)	Escalante Canyons Unit (acres)	KEPA (acres)	Total Acres
Alternative A	0	0	0	0	0
Alternative B	18,147	113,654	48,294	379,427	559,521
Alternative C	11,816	31,515	14,664	34,757	92,752
Alternative D (Preferred Alternative)	0	0	0	0	0
Alternative E (Proposed Plan)	0	0	0	0	0

KEPA – Kanab-Escalante Planning Area

Impacts from Mineral Development in Lands with Wilderness Characteristics in KEPA

Mineral resource development would have long-term, direct, adverse impacts on lands with wilderness characteristics in KEPA resulting from surface disturbance, infrastructure development, OHV and mechanized vehicle use and traffic, and other project-related activity (e.g., noise). These adverse effects could alter the naturalness of the area and conflict with opportunities for solitude and primitive and unconfined recreation. Alternatives D and E do not specifically restrict mineral development on lands with wilderness characteristics, and lands with wilderness characteristics areas in KEPA would generally be available for mineral development that could adversely affect wilderness characteristics. Alternative B manages lands with wilderness characteristics as closed to mineral development, which would decrease the potential for adverse impacts from mineral development in KEPA in comparison to the

other alternatives. While Alternative C recommends withdrawals from locatable mineral entry and prohibits surface occupancy for mineral leasing (NSO) in KEPA, it allows expansion of mineral materials sites, potentially resulting in adverse impacts on components of wilderness characteristics. For former SITLA parcels in KEPA that are completely surrounded by WSAs, alternatives C, D, and E would result in a checkerboard pattern of lands that are open to mineral leasing (subject to minor and moderate constraints) but completely surrounded by lands that are closed. Development in former SITLA parcels surrounded by WSAs would be unlikely because ROWs would need to be granted across WSAs to reach the former SITLA parcels. While no lands with wilderness characteristics would be managed specifically for protection of wilderness characteristics in Alternative A, the substantial overlap between these areas and the Outback and Primitive Management Zones would generally provide protection of wilderness characteristics similar to management under alternatives B and C.

The RFD indicates that there would be at most 10 producing oil and gas wells (and four exploratory wells) and a single underground coal mine during the planning period. As a result, potential impacts from mineral development in lands with wilderness characteristics in KEPA would likely be very limited and localized. Furthermore, individual projects may require additional site-specific NEPA analysis and the BLM would apply appropriate BMPs, mitigation, and adaptive management to reduce potential impacts on lands with wilderness characteristics. Refer to Appendix G, *Best Management Practices,* for more information.

Impacts from ROWs and/or Renewable Energy Development

ROW development, such as a road, pipeline, transmission line, communication site, or energy-related project, can result in adverse impacts on lands with wilderness characteristics by altering their naturalness and conflicting with opportunities for solitude and unconfined recreation. Alternatives D and E do not specifically manage areas for the protection of wilderness characteristics, increasing the potential for adverse effects on wilderness characteristics in these areas from ROW development. Conversely, Alternative B manages all lands with wilderness characteristics as ROW exclusion areas, avoiding potential adverse impacts. Alternative C designates all areas specifically managed to protect lands with wilderness characteristics as ROW avoidance areas, providing additional opportunities to reduce or mitigate adverse impacts from ROW development to a greater extent than management under alternatives D and E, although not to the extent of management under Alternative B. Alternatives C, D, and E would result in a checkerboard pattern of former SITLA parcels that are open to new ROWs, but completely surrounded by WSA lands that are managed as ROW exclusion. Under all alternatives, it is unlikely that ROWs could be granted access across the surrounding WSAs to reach these former SITLA parcels. While no lands with wilderness characteristics would be managed specifically for protection of wilderness characteristics under Alternative A, the substantial overlap between these areas and the Outback and Primitive Management Zones would generally provide protection of wilderness characteristics similar to management under Alternative B (in the Primitive Management Zones) or Alternative C (in the Outback Management Zones).

Under alternatives C, D, and E, where identified lands with wilderness characteristics are managed for other multiple uses within GSENM, any potential ROW approval or other development in GSENM would still ensure the proper care and management of the monument objects.

Impacts from Vegetation Treatments

Vegetation management actions would reduce fuel loads, control the spread of invasive species, reduce the potential for uncharacteristic wildfires and large-scale alterations to vegetation patterns, generate new vegetation growth, and increase water availability. While short-term, adverse impacts could include the noise and presence of people, equipment, and operations that could temporarily diminish opportunities for solitude and primitive forms of recreation, vegetation management that maintains or improves ecosystem health and function and apparent naturalness is likely to have long-term, beneficial impacts on lands with wilderness characteristics. Under Alternative A, the use of machinery for vegetation restoration is prohibited in the Primitive Management Zone and stipulations for chaining are applied in the Outback, Frontcountry, and Passage Management Zones, reducing potential short-term adverse as well as long-term beneficial impacts. Alternative B prohibits vegetation treatments on all lands with wilderness characteristics, eliminating potential short-term adverse as well as long-term beneficial impacts from active vegetation management. Alternative C allows vegetation treatments for the purpose of maintaining or restoring ecological condition, increasing both potential short-term adverse effects on opportunities for solitude and primitive forms of recreation and long-term beneficial impacts on the appearance of naturalness compared to Alternative B. Alternatives D and E do not specifically manage areas for the protection of wilderness characteristics and, as a result, would generally allow the broadest range of vegetation treatments in these areas of any alternative.

Impacts from Travel Management and Visual Resources Management

Management that allows or restricts OHV access to lands, and management that allows more or less visual contrast (as measured by Visual Resource Management [VRM] classes), can affect the preservation of wilderness characteristics. The application of restrictive VRM Class I or II management for lands with wilderness characteristics can help preserve the naturalness of these areas, while application of VRM Classes III and IV can allow levels of visual contrast that damage or degrade the naturalness of these areas. Allowing access for motorized OHV travel via routes in lands with wilderness characteristics could adversely affect the opportunities for solitude or primitive and unconfined recreation components of these areas. Alternative B manages all lands with wilderness characteristics as closed to OHV use and VRM Class I, eliminating potential effects on wilderness characteristics components in these areas. Under Alternative C, which would specifically manage these areas for the protection of wilderness characteristics, OHV use in lands with wilderness characteristics is limited to designated routes. Limiting OHV use to designated routes would reduce impacts on wilderness characteristics by reducing the areas where OHV use is allowed, although not to the extent of management under Alternative B. In addition, Alternative C applies VRM Class II in areas specifically managed to preserve their wilderness characteristics, limiting degradation of naturalness of some of the lands with wilderness characteristics in the Planning Area. Alternatives D and E do not specifically include travel management or visual resource provisions to protect areas with wilderness characteristics, and would likely allow development in some lands with wilderness characteristics that would adversely affect the apparent naturalness of these areas. For former SITLA parcels that are completely surrounded by WSAs, alternatives D and E would result in a checkerboard pattern of lands designated as OHV limited and VRM Class II, III, or IV that are completely surrounded by lands that are managed as OHV closed areas and VRM Class I.

Alternative C would reduce this impact by managing Steep Creek as an OHV closed area and the remaining WSAs as OHV limited areas.

3.4.2.3 Cumulative Effects

The cumulative impacts analysis area for lands with wilderness characteristics includes the identified lands with wilderness characteristics and the WSAs within the Planning Area. This analysis area encompasses the extent of areas identified as lands with wilderness characteristics and WSAs. Lands with wilderness characteristics in the Planning Area are particularly susceptible to impacts from mineral development, ROWs, and renewable energy development, as well as vegetation treatments, as these actions can reduce an area's naturalness by introducing human-made activity, disturbance, and features. These activities would contribute to cumulative impacts on lands with wilderness characteristics if they occur within the boundaries of areas managed for wilderness characteristics. Development projects that fragment lands with wilderness characteristics may result in certain areas that no longer meet the minimum size requirements for protection (Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*). Based on the management actions for development under the alternatives, the potential for adverse direct and indirect cumulative impacts from mineral development, ROWs, and renewable energy development, as well as vegetation treatments, would be greatest under alternatives D and E, and smallest under alternatives B, A, and C, respectively.

3.5 Paleontological Resources

3.5.1 Affected Environment

The analysis area for paleontological resources is the Planning Area.

The Planning Area includes bedrock geologic formations ranging from Permian to Late Cretaceous in age, and Neogene surficial deposits. Fossils occur in all geologic formations and in the Neogene units in the Planning Area, but the most scientifically important geologic units are the Chinle and Morrison formations, and the entire Late Cretaceous succession. The Late Cretaceous succession is unique to the Planning Area and holds high scientific and public significance, particularly from the western Kaiparowits Plateau to Skutumpah Terrace. Dozens of new dinosaur and other large vertebrate taxa and hundreds of smaller taxa have been discovered, making it one of the most complete Late Cretaceous terrestrial fossil vertebrate successions in the world. Petrified wood sites and areas with high visitation potential are also of elevated management concern.

Age, fossil types, acreage, and Potential Fossil Yield Classification[2] (PFYC) for all geologic formations in the Planning Area are summarized in Table 3.5-1, and geologic and PFYC features are depicted on Maps 8 through 10 in Appendix A, *Maps*. Refer to Chapter 2, Section 2.2.8, *Paleontological Resources* (pages 51–55), and Appendix 5, *Paleontology* (pages 269–305), in the AMS (BLM 2018b) for more information on geologic units and fossil resources within the Planning Area. The PFYC system is a predictive resource management tool developed by the BLM (2016) that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential).

[2] PFYC values listed in Appendix 5, *Paleontology* (pages 269–305), in the AMS (BLM 2018b) were updated to reflect current BLM PFYC guidance (BLM 2016).

The BLM has tracked key paleontological indicators and trends in the Planning Area since 2000. The following is a summary of the paleontological indicators, current conditions, trends, and forecasts. There are approximately 52,000 paleontological specimens curated in museums that have come from the Planning Area. The total number of museum-curated specimens has steadily increased over the years, with 300 to 500 new specimens added annually, and this number is expected to continue to increase. There are typically between two and ten scientific publications annually for paleontological resources in the Planning Area, and this number has steadily increased since GSENM was established and is expected to continue to increase. There are five partnerships with major museums and educational institutions, which have stayed constant over the years. Between 30 and 50 in-situ fossil sites are monitored for public impacts and 5,000 to 6,000 new acres are proactively inventoried per year. The number of sites monitored fluctuates greatly each year, but the number of proactively inventoried acres per year has been relatively constant over the last 18 years. Five fossil sites are dedicated to public visitation (four within GSENM boundaries and one within KEPA) and two to three new public exhibits are added annually, and these numbers are expected to increase. There are no public collecting sites, but it is anticipated such sites will be established in the future. Refer to Chapter 2, Section 2.2.8, *Paleontological Resources* (pages 51–55), in the AMS (BLM 2018b) for more information on paleontological indicators, current conditions, trends, and forecasts.

Several locations within the Planning Area have been the target of illegal fossil collection. This includes the collection of invertebrates from the Permian formations, petrified wood and small vertebrate specimens (especially phytosaur teeth) from the Chinle Formation, fossil bone and petrified wood from the Morrison Formation, invertebrates and plants from the Naturita Formation, large invertebrates and shark teeth from the Tropic Shale, shark teeth and other smaller vertebrate remains from the Straight Cliffs Formation, and large petrified logs from the Wahweap Formation. Illegal/unauthorized molding and casting of footprints has occurred in the Kayenta and Navajo formations. Refer to Appendix 5, *Paleontology* (pages 269–305), in the AMS (BLM 2018b) for more information on illegal fossil collection in specific geologic units.

Table 3.5-1. Geology and Paleontology Summary

Geologic Formation	Age	PFYC	Documented Fossil Types	GS (acres)	KP (acres)	EC (acres)	KE (acres)
Various	Permian	3	Invertebrate	0	0	0	13,373
Moenkopi	Triassic	3	Invertebrate; trace; stromatolite	5,512	0	1,683	124,685
Chinle	Triassic	4	Crocodile-like reptile, amphibian; invertebrate; plant; trace	9,673	797	14,150	22,401
Moenave	Triassic - Jurassic	4	Fish, tetrapod, dinosaur; invertebrate; microfossil; trace; stromatolite	6,266	1,018	0	605
Wingate Sandstone	Triassic - Jurassic	3	Fish, tetrapod, dinosaur; invertebrate; microfossil; trace; stromatolite	0	0	7,532	511
Kayenta	Jurassic	4	Trace; plant; frog, turtle, mammal-like reptile, protosuchid, pterosaur, dinosaur	29,246	6,992	25,735	2,577
Navajo	Jurassic	3	Fish, cynodont, dinosaur; trace	77,434	36,281	111,509	36,198
Carmel	Jurassic	2	Invertebrate; trace; stromatolite	33,188	18,470	33,107	70,745
Entrada	Jurassic	4	Trace	79	4,820	3,852	41,462
Morrison	Jurassic	4	Dinosaur; plant	0	5,796	0	12,543
Cedar Mountain/ Naturita (formally Dakota)[1]	Cretaceous	4-5	Shark, fish, amphibian, lizard, turtle, snake, crocodilian, dinosaur, marine reptile, mammal; invertebrate; plant; trace	110	3,222	0	22,164
Tropic Shale[1]	Cretaceous	5	Shark, fish, turtle, marine reptile, dinosaur; invertebrate	18	10,929	0	48,515
Straight Cliffs[1]	Cretaceous	3-4	Shark, fish, frog, salamander, lizard, snake, dinosaur, mammal; invertebrate; plant; trace	0	165,365	0	221,233
Wahweap	Cretaceous	5	Fish, amphibian, lizard, turtle, crocodilian, dinosaur, mammal; Invertebrate; plant; trace	0	151,191	0	32,746
Kaiparowits	Cretaceous	5	Shark, fish, amphibian, turtle, lizard, snake, crocodilian, pterosaur, dinosaur, mammal; invertebrate; plant	0	65,336	0	1,532
surficial deposits	Neogene	3	Mammoth, camel, horse, giant bison	52,822	89,877	45,599	252,532
			Total	214,347	56,095	243,168	903,821

Sources: BLM 2016, 2018b, 2018f

[1] Most of the scientifically significant vertebrate fossil producing areas are now outside of special designation.

GS – Grand Staircase Unit, KP – Kaiparowits Unit, EC – Escalante Canyons Unit, KE – Kanab-Escalante Planning Area

3.5.2 Environmental Consequences

Direct adverse impacts on paleontological resources result from destruction due to surface-disturbing activity and natural biological and physical erosion. Adverse indirect impacts typically result from the continuing implementation of management decisions and resulting activities, including normal ongoing operations of facilities constructed within a given project area. They also occur as a result of management decisions that increase public access and therefore increase the likelihood of the loss of paleontological resources through vandalism and unlawful collecting. Adverse cumulative impacts result from the incremental loss of paleontological resources and the associated irretrievable loss of scientific information over time because of ground disturbance, vandalism, and both lawful (casual collection) and unlawful collection. Conversely, beneficial direct, indirect, and cumulative impacts on paleontological resources could result from management decisions that restrict surface-disturbing activities, close or limit travel and access, establish areas as special designations, conserve important specimens in publicly accessible museum collections, and inventory sites to facilitate mitigation and avoidance.

3.5.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on paleontological resources from implementation of the management alternatives. Impacts on paleontological resources would primarily result from the following impact mechanisms:

- Surface-disturbing activities
- Increased public access
- Proactive management to benefit paleontological resources
- Natural agents of erosion
- Collecting activities both legal and illegal

Effects on paleontological resources from these impact mechanisms are generally described in a qualitative fashion, with acreages provided where appropriate to draw distinctions among the alternatives. This analysis uses the following assumptions:

- The degree of impact attributed to ground disturbance would be affected by several factors, including the PFYC of the affected geologic units, the type and degree of disturbance, and mitigating actions applied to the disturbance.
- Impacts on paleontological resources are long term and permanent, because fossils are non-renewable resources that cannot be replaced once lost.

3.5.2.2 Direct and Indirect Effects

Management for mineral development, lands and realty, and renewable energy development in KEPA could result in direct adverse impacts on paleontological resources through opening areas to surface-disturbing activities in geologic units with PFYC 3 to 5. Management for recreation and transportation could result in indirect adverse impacts by increasing public access to sensitive paleontological resources. Management decisions that limit the potential adverse effects on paleontological resources from other resource uses by instituting constraints on those uses include special designations (e.g., ACECs designated to protect paleontological resources and ACECs that limit surface disturbance), certain recreation management areas (e.g., SRMAs and RMZs that limit surface disturbance to meet recreation objectives),

management of lands with wilderness characteristics for the protection of those characteristics (e.g., limits on surface disturbance and activity to preserve naturalness and outstanding opportunities for solitude), WSAs (e.g., limitations on mineral leasing and ROWs to maintain wilderness designation), and resource-/area-specific protective closures (e.g., limitations in relict plant communities). In general, potential impacts on paleontological resources would be greatest in the GSENM Kaiparowits Unit compared to the other units due to the higher concentration of discovered paleontological resources and the higher PFYC rating in this unit, though the potential for impacts depends on the types of activities in the GSENM units and mitigation measures and adaptive management that would be applied during site-specific permitting.

Application of the paleontological resource BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for adverse impacts on paleontological resources. BMPs require avoidance of areas with unique paleontological resources and allow for sampling in areas of ubiquitous fossils, as well as implementation of measures to minimize impacts on the remaining paleontological resources.

Impacts from Surface-Disturbing Activities

Direct adverse impacts on paleontological resources could result from surface-disturbing activities in PFYC 3 to 5 geologic units, including surface coal mining operations, mineral exploration and development, oil and gas development, and development of facilities, roads, and recreation sites. The potential for surface disturbance and associated effects on paleontological resources would be greatest in KEPA due to the higher potential for development in KEPA. Management that limits ground disturbance by designating ACECs in KEPA, managing for lands with wilderness characteristics, establishing ROW avoidance and exclusion areas, managing for certain recreation outcomes, and applying surface-use stipulations to mineral and renewable energy development in KEPA, or through other means, would reduce the potential for adverse impacts.

Adverse impacts on paleontological resources can occur from surface-disturbing activities that result in the physical damage or destruction of fossils. Differences in potential surface disturbance among the alternatives are driven by the degree of use restrictions on mineral development in KEPA, the availability of areas for issuance of new ROW and renewable energy permits in KEPA, the creation of facilities and infrastructure for transportation and recreation, and the extent and management of special designations in the alternatives. Alternatives D and E would result in the greatest potential for direct adverse impacts from surface-disturbing activities because these alternatives contain the fewest acreage of special designations and fewest restrictions on resource uses, followed by Alternative C, Alternative A, and Alternative B, respectively (refer to Table 3-1). However, all alternatives, including alternatives D and E, are subject to BMPs during site-specific permitting, and the Planning Area contains 881,159 acres of WSA lands that have embedded surface disturbance restrictions. In addition, alternatives D and E may result in the greatest potential for the identification of new paleontological resources. As noted above, alternatives D and E would increase the potential for surface disturbance in both KEPA and GSENM compared to the other alternatives and the BLM would require pre-disturbance paleontological inventories prior to surface disturbance. Under all alternatives, measures would be taken to avoid impacts on unique specimens if surface-disturbing activities uncover paleontological resources.

Impacts from Public Access

Long-term, indirect, adverse impacts on paleontological resources could result from public access to PFYC 3 to 5 geologic units, including opening routes for public use and increasing recreation opportunities. Management actions that constrain those uses, such as special designations like ACECs that restrict public access, would reduce the potential for adverse impacts.

An increase in public access would also increase the likelihood of the loss of paleontological resources through vandalism and unlawful collecting. Differences in public access among the alternatives are driven by the extent of allowable casual collection of paleontological resources, degree of use restrictions in areas open for transportation and recreation, and extent and management of special designations in the alternatives. The potential for direct impacts from increased public access is greatest under alternatives D and E, followed by Alternative C, Alternative A, and Alternative B, respectively.

Impacts from Collection

Casual collection of paleontological resources and petrified wood can result in the loss of paleontological resources over time. However, allowing for collection provides beneficial effects on public land users interested in the unique paleontological resources in the Planning Area. In general, the potential for adverse impacts associated with collection would be proportional to the acreage open or closed for casual collection under each alternative.

Within KEPA, alternatives D and E would result in the greatest potential impacts on paleontological resources by allowing casual surface collection of common invertebrate and plant paleontological resources across KEPA, except in certain areas in Camp Flats and Tibbett Head (Maps 12 and 13), and where such resources are of critical scientific or recreational value and need to be protected, or where collection is incompatible with other resource protection. Alternatives D and E would also allow casual collection of rocks, minerals, and petrified wood across the entirety of KEPA, except where prohibited and posted. Alternatives A and B would result in the fewest potential impacts on paleontological resources in KEPA by prohibiting casual collection of paleontological resources, mineral resources, and petrified wood across the entirety of KEPA. Alternative C would fall between alternatives B, D, and E by allowing casual collection of minerals, rocks, petrified wood, and common invertebrate and botanical paleontological resources for personal (non-commercial) use across KEPA, except in certain areas identified as closed to collection (Map 11).

Within GSENM, alternatives A, B, and E would close the entirety of GSENM to casual collection of paleontological resources, minerals, and petrified wood. Alternatives C and D would prohibit casual collection of paleontological resources except in specially designated and posted surface collection areas including certain areas along Cottonwood Canyon Road and in the Straight Cliffs/Fiftymile Mountain area (Maps 11 through 13). As a result, alternatives C and D would increase potential impacts on paleontological resources by opening these areas to casual collection; however, opening these areas to casual collection would benefit public land users interested in the unique paleontological resources in the Planning Area. Casual collection in these areas would be limited to surface collection, and excavation and digging for paleontological resources would not be allowed. Alternatives B and E would prohibit casual collection of mineral resources and petrified wood across GSENM. Alternatives C and D would

prohibit casual collection of mineral resources and petrified wood except in specially designated and posted collection areas.

Impacts from Proactive Management

Management that requires proactive inventory of paleontological resources may result in beneficial impacts because inventories can result in the discovery, documentation, recovery, and curation of significant fossils. Beneficial impacts from proactive surveys would occur under all alternatives. Proactive inventories would identify critical or scientifically significant specimens and potential adverse impacts would be mitigated by collection and curation. Natural erosion can also uncover previously covered fossils and increase the potential for fossil discoveries if these areas are surveyed for paleontological resources.

Within KEPA, management of ACECs for paleontological values would result in the greatest beneficial impact on paleontological resources under alternatives B and C. The designation of ACECs under these alternatives would subject the least acreage to surface-disturbing and casual collection activities. Alternatives D and E do not designate ACECs and provide less protection and greater exposure to direct impacts from surface-disturbing and casual collection activities, but may result in more identification of paleontological localities due to increased resource use and required pre-disturbance surveys. Alternative A also designates no ACECs, but subjects less acreage to surface-disturbing activities than alternatives D and E through restrictions on other resource uses (e.g., mineral leasing in KEPA).

Alternative B designates 103,568 acres of ACECs for which paleontological resources are a relevant and important value, including portions of the paleontologically sensitive Petrified Wood Resource Area and Naturita, Tropic Shale, Straight Cliffs, Wahweap, and Kaiparowits formations. Alternative C designates 51,557 acres as paleontological ACECs, including portions of the Petrified Wood Resource Area and Wahweap Formation. The potential ACEC designations would generally offer greater protection of paleontological resources than management of these areas under general program management.

Alternatives B, C, D, and E include development of a Paleontological RMP for GSENM and certain lands within KEPA that contain scientifically significant fossils. The Paleontological RMP would include components outlining the organization and structure of a paleontological resource program that would provide protocols for the inventory, collection, and protection of paleontological resources. The plan would also include protocols for the management of paleontological sites by class, as well as providing for the identification of scientific, educational, and recreational use opportunities while also allowing volunteer/citizen scientist involvement in paleontological management and research endeavors. Potential threats to paleontological resources include increased public access, disturbance, and removal of scientifically significant fossils; however, protocols to monitor trends and conditions of paleontological sites, including prioritization for scientifically important fossils based on threats, would be identified in the Paleontological RMP.

Development and implementation of a Paleontological RMP would increase consistency in inventory and collection protocols, increase potential for research opportunities and scientific understanding of significant fossils, and increase opportunities for public appreciation and involvement through expanded coordination with counties or municipalities and onsite or community-based interpretation for significant sites and specimens. As part of the Paleontological RMP, a Collections Management Strategy for specimens would be developed.

The Collections Management Strategy would provide an overall approach for displaying Planning Area paleontological resources in museums, including offsite and non-local museums.

Impacts on Monument Objects

Several paleontological resources are described as monument objects within the Grand Staircase and Kaiparowits Units of GSENM (see Appendix E, *Grand Staircase-Escalante National Monument Objects and Resource Values*). These include the Flag Point dinosaur tracks; Late Triassic to Early Jurassic petrified wood, fish, dinosaur bones, and trackways; and significant fossils from several geological formations.

The direct and indirect paleontological impacts and the differences in these impacts across alternatives described above would also generally apply to paleontological resource monument objects when the monument objects could be affected by the management and associated impacts in GSENM. Similarly, the beneficial impacts and protective measures described above in the direct and indirect analysis of impacts on paleontological resources would support the proper care and management of monument objects.

Alternatives A and B would generally result in the least potential for adverse impacts on paleontological resource monument objects in GSENM due to decreased potential for resource use and increased protection of resources that could afford protection to paleontological resource monument objects. By comparison, alternatives C, D, and E would generally allow greater access and development in GSENM than alternatives A and B, and therefore would have the potential to result in more adverse impacts on paleontological resource monument objects than alternatives A and B.

Because casual collection can result in the incremental loss of paleontological resources over time, alternatives A, B, and E would result in the least potential for adverse impacts by prohibiting casual collection of paleontological and mineral resources, including petrified wood, across the entirety of GSENM. Conversely, alternatives C and D would prohibit casual collection within the majority of GSENM, with casual collection allowed in two designated and posted collection areas (Maps 11 through 13). While casual collection in GSENM would be restricted to common invertebrate and plant paleontological resources in alternatives C and D some inadvertent loss of significant specimens could occur. Under all alternatives, the BLM would retain the ability to manage for the protection of paleontological resources under the authority of FLPMA and the Paleontological Resources Preservation Act of 2009 (16 U.S.C. 470aaa–aaa-11).

All alternatives generally limit the extent of surface disturbance in GSENM (e.g., withdrawn from mineral entry), and thus all alternatives are anticipated to support the proper care and management of paleontological resource monument objects by limiting new development and disturbance in GSENM. Additionally, all of the alternatives would result in the proper care and management of paleontological monument objects by requiring proactive paleontological resource inventories and pre-disturbance inventories. All action alternatives also require application of appropriate BMPs for the protection of paleontological resources as identified in Appendix G, *Best Management Practices* (e.g., avoiding areas with unique paleontological resources, sampling and recording paleontological resources in areas where ubiquitous fossils are present), which would provide for the proper care and management of paleontological resource monument objects. Additionally, monitoring strategies for paleontological resources described in Appendix I, *Monitoring Strategy*, would ensure the proper care and management of

monument objects (e.g., performing site surveys prior to surface disturbance in areas where the PFYC of underlying bedrock is 4 to 5 and applying stipulations for inadvertent discoveries in areas with significant fossils present). As described in Appendix I, *Monitoring Strategy*, the BLM would also monitor areas with increased access and high visitation. If access and activity in these areas indicate potential impacts on monument objects, the BLM would apply access restrictions such as fencing or signage to ensure the proper care and management of monument objects.

3.5.2.3 Cumulative Effects

The cumulative impacts analysis area for paleontological resources is the Planning Area. The actions included in this analysis are provided in Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*. Past and ongoing looting and vandalism of paleontological resources has contributed to cumulative impacts in the analysis area. Trending increases in visitation and recreation use in the analysis area may further contribute to potential increases in cumulative impacts on paleontological resources by increasing legal and illegal collection and looting and vandalism.

Projects that result in increased development and recreation opportunities in the region would increase the likelihood for cumulative impacts on paleontological resources due to surface disturbance in paleontologically sensitive geologic units and increased public access, which increases the potential for illegal fossil collection; over-collection of fossils (such as petrified wood) in areas open to casual collection; and vandalism. Specific actions that could contribute to cumulative impacts include HITRR improvement projects that could increase and improve access, buried pipelines such as the Lake Powell pipeline and various fiber optic lines, and mineral development projects in the analysis area.

Special designations and restrictions on surface disturbance reduce the potential for cumulative impacts on paleontological resources within the Planning Area and region, as they would restrict the frequency and extent of surface-disturbing activities and recreation uses that could adversely affect paleontological resources. Alternative B would have the greatest likelihood of reducing adverse potential cumulative impacts on paleontological resources. Alternatives D and E would have the greatest likelihood of increasing adverse potential cumulative impacts in KEPA but may contribute to greater identification of paleontological localities due to increasing the potential for pre-disturbance paleontological surveys.

Increased public access or opportunities for casual collection on BLM-administered surface land may increase the potential for impacts on paleontological resources on adjacent private lands or lands managed by Glen Canyon NRA. Boundaries between BLM-administered surface land and adjacent landowners are often unsigned in remote portions of the Planning Area. Where BLM management is inconsistent or incompatible with management of adjacent areas, confusion by the public may lead to inadvertent casual collection or damage to paleontological resources on these non-BLM lands. Potential impacts from inadvertent casual collection or resource damage would be least likely under alternatives A, B, and E and greatest under alternatives C and D based on the area available for casual collection under these alternatives.

3.6 Soil and Water Resources

3.6.1 Affected Environment

3.6.1.1 Soil Resources

The analysis area for soils is the Planning Area.

The Planning Area contains low to high elevations with rugged table land topography composed of structural benches, mesas, valley floors, valley plains, alluvial fans, stream terraces, hills cuestas, and mountainsides. The dominant soil orders in the Planning Area are Aridisols, Entisols, and Mollisols, which make up approximately 261,000 acres, 840,300 acres, and 5,600 acres, respectively (NRCS 2005). Soils within the Planning Area are predominantly semiarid, young, and poorly developed, and are derived from sedimentary rock. These soils are slow to develop from chemical and biological development processes, and are shallow (fewer than 1.6 feet [0.5 meter] deep to bedrock) due to fast erosion rates, with deeper soils being formed in recent alluvium. Refer to Chapter 2, Section 2.2.9, *Soil Resources* (pages 55–58), and Appendix 1 (*Maps*), Map 8 (page 220), in the AMS (BLM 2018b) for more information on dominant soil orders in the Planning Area.

Slopes in the analysis area range from low slopes (0 to 5 percent) to very steep, high-gradient slopes (greater than 30 percent) (Map 15). Steep and relatively flatter slopes are interspersed throughout the analysis area. Water and wind erosion, particularly in places with steep slopes, are common disturbances to soils as the result of human activities, including past mining, recreation, and grazing that affect protective crusts and vegetation and lead to the exposure of underlying soils (Bryce et al. 2012). Erosion rates were measured by Darling (2016) in the Planning Area, and were determined to be generally high due to the erosion of underlying weak rock eroding stronger but exposed sections of rock.

The analysis area contains sensitive soils that are affected by a number of factors such as drought, permanent saturation, shallowness, and content, which make soils susceptible to impacts and difficult to restore or reclaim (Map 14). The Grand Staircase Unit has the fewest acres of sensitive soils (179,437 acres), and KEPA has the most acres of sensitive soils (538,573 acres). The Kaiparowits Unit and Escalante Canyons Unit have 354,753 and 225,091 acres, respectively, of sensitive soils. Refer to Chapter 2, Section 2.2.9, *Soil Resources* (pages 55–58), in the AMS (BLM 2018b) for more information on sensitive soils.

Biological soil crusts are an important component for the analysis area because they support ecosystem health through soil stabilization, hydrologic processes, nutrient cycling, and biological diversity (Miller 2008:251). Biological soil crusts also act as a useful ecological indicator due to their sensitivity to disturbance (Bryce et al. 2012). Soils and vegetation types common throughout the analysis area support biological soil crusts. Biological soil crusts are functionally significant in the analysis area due to their important roles in supporting ecosystem health and the presence of sensitive soils (Miller 2008:259). Refer to Chapter 2, Section 2.2.9, *Soil Resources* (pages 55–58), and Appendix 1 (*Maps*), Maps 10 and 11 (pages 222–223), in the AMS (BLM 2018b) for more information on biological soil crusts.

3.6.1.2 Water Resources

The analysis area for water includes all surface water and groundwater resources within or crossing the boundary of the Planning Area. The analysis area receives an average of

approximately 10 to 20 inches of precipitation annually (Utah Division of Water Resources 2014). There are limited sources of surface water in the analysis area, which is susceptible to both flooding and drought (Wilkowske et al. 2003).

Surface Water

The analysis area overlaps four hydrologic unit code-8 (HUC-8) subbasins, including the Kanab Creek, Paria River, Lower Lake Powell, and Escalante River subbasins. These subbasins include numerous natural creeks and waterbodies, linear conveyances (e.g., canals), and artificial waterbodies, as described in Appendix P, *Water Resources*, Table 1, Subbasins and Surface Waterbodies in the Analysis Area. The Lower Lake Powell subbasin accounts for the largest acreage of the analysis area (1,914,128 acres), while the Paria River subbasin accounts for the smallest acreage (903,979 acres). The Kanab Creek and Escalante River subbasins account for 1,507,353 and 1,295,715 acres of the analysis area, respectively.

The Planning Area is situated in a dry desert climate so the majority of surface streams and washes are intermittent or ephemeral, flowing only after precipitation events. The Paria and Escalante Rivers are the two major drainages in the Planning Area. Most of the mainstem Paria River within the Planning Area flows on a perennial basis, with small reaches near the upper and lower extremities of the river within the monument that are typically dry (Utah DEQ 2004). The flowing reaches are fed by subsurface flows, springs, and other groundwater expressions, and by bank storage after high flows (BLM 1999a). Appendix P, *Water Resources*, includes the length of ephemeral streams where information is available from existing BLM data. The USGS (1999) estimates that there are approximately 7,500 miles of streams and washes within the analysis area, with approximately 96 percent of these being intermittent or ephemeral. All surface water in the analysis area flows into the Colorado River.

The major surface water use in the analysis area is agricultural irrigation, which is supplied by the Wide Hollow Reservoir and Henrieville Creek. The town of Henrieville obtains water from springs and horizontal wells in the area adjacent to Henrieville Creek, approximately 5 miles east of town. Use of these water sources has increased slightly over time, while other water uses, including livestock use, have generally remained the same.

Twelve waterbodies or reaches in the analysis area are on the Utah 303(d) List of Waters for Reporting Year 2016, indicating they did not meet water quality standards (Utah DEQ 2016). Limited monitoring data exist, but the available data suggest water quality problems are generally stable. However, two reaches (Reach 1 and Reach 3) within the Paria River were identified as being impaired due to exceedance of Utah's total dissolved solids (TDS) criteria for protection of agricultural uses (Class-4 waters), including irrigation and stock watering. The Paria River Watershed Water Quality Management Plan identified that the predominant source of TDS loading in the Paria River is from naturally occurring geologic formations prevalent within the watershed, particularly Tropic Shale, as well as saline aquifers (Utah DEQ 2004). The plan recommends implementing site-specific TDS standards (2,500 milligrams per liter and 1,500 milligrams per liter for Reach 1 and Reach 3, respectively) to reflect the natural background concentrations of TDS in the river. The plan also recommends, to the extent possible, reducing TDS loads by reducing sediment loading and improving irrigation efficiency in the watershed.

Refer to Chapter 2, Section 2.2.13, *Water Resources* (pages 88–94), Table 22 (pages 90–91), and Appendix 1 (*Maps*), Map 18 (page 230), in the AMS (BLM 2018b) for more information on impaired waterbodies.

Groundwater

The primary aquifers in the analysis area are the Colorado Plateau aquifers, the Glen Canyon regional aquifer system, and the Mesa Verde, Dakota, Morrison, and Entrada-Preuss aquifers, which range in depth from 200 feet (Dakota aquifer) to 2,200 feet (Glen Canyon aquifer) (Freethey 1997). Precipitation and snowmelt are a substantial source of recharge to aquifers underlying the analysis area. These aquifers, in addition to 262 springs, sustain part of the base flows of some of the creeks and rivers in the analysis area.

Groundwater quantity and quality is variable in the analysis area, although a formal inventory of groundwater quantity and quality has not yet been completed. There are 1,450 underground wells (active water rights) in the analysis area that, in addition to springs, support domestic, municipal, irrigation, and livestock watering uses. Water sources in the analysis area are considered to be fully appropriated (Utah Division of Water Rights 2011a, 2011b).

Floodplains

Flash flooding can occur in canyons and washes in the analysis area during periods of heavy rainfall, dam or levee failure, or ice jams. While flood hazard maps are not available for the analysis area (FEMA 2017), flash flooding potential is monitored and rated for flood-prone areas on a twice-daily basis during summer and fall seasons. Refer to Chapter 2, Section 2.2.13, *Water Resources* (pages 88–94), in the AMS (BLM 2018b) for more information on flooding and flood risk monitoring.

3.6.2 Environmental Consequences

3.6.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on soil and water resources from implementation of the management alternatives. Impacts on soil and water resources would primarily result from the following impact mechanisms:

- Surface-disturbing activities and vegetation removal
- Vegetation treatments, including prescribed and wildland fires

Effects on soil and water from these impact mechanisms are described in a qualitative fashion because locations and timing of impact-generating activities are largely unknown and therefore provide insufficient information to conduct an overlay analysis or to model watershed runoff and erosion.

This analysis uses the following assumptions:

- The degree of impact attributed to any one disturbance or series of disturbances would be affected by several factors, including location within the watershed; the type, time, and degree of disturbance; existing soil and water conditions; precipitation; and mitigating actions applied to the disturbance.
- Surface waters include flowing streams (perennial, intermittent, and ephemeral), lakes, ponds, reservoirs, and canals.

3.6.2.2 Direct and Indirect Effects

Surface disturbance and vegetation removal from mineral development in KEPA, vegetation treatments, installation or maintenance of livestock grazing range improvements, ROW and renewable energy development in KEPA, development and maintenance of routes and trails, OHV use, and recreation are the primary activities likely to have direct and indirect adverse impacts on soil and water resources. Management decisions that would limit potential adverse effects on soil and water from these activities include renewable energy avoidance/variance and exclusion areas, constraints on mineral development and withdrawals, restrictions on surface disturbance in fragile or sensitive soil areas and in areas with steep slopes, vegetative cover requirements, and maintenance and protection of existing water resources.

Despite short-term adverse impacts, surface-disturbing and vegetation removal activities associated with mechanical vegetation treatments and prescribed fires are ultimately expected to have long-term beneficial impacts by maintaining native plant communities, increasing vegetative cover, and enhancing fire resilience, which can indirectly reduce soil erosion and sedimentation.

Impacts on soils and water from livestock use are highly variable and dependent on site characteristics and grazing practices.

Impacts from Surface-Disturbing Activities and Vegetation Removal

Surface-disturbing activities result in soil loss, decreased soil productivity, soil compaction, and other changes in the physical and chemical properties of soils. These factors can decrease soil reclamation potential, disrupt or damage biological soil crusts, and create opportunities for the establishment and spread of noxious weeds that provide less vegetative cover than native species. Decreased vegetative cover and soil compaction would also 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 contribute to stream bank erosion, increased turbidity, and degradation of water quality, potentially leading to new surface water impairments or inhibiting resolution of existing impairments.

Alternative B would prohibit surface-disturbing activities in fragile or sensitive soil areas. Alternatives C and D would allow surface-disturbing activities in drinking water source protection zones and fragile or sensitive soils (only after development of a soil health and restoration plan outlining specific mitigation measures, subject to BLM approval). Based on site-specific conditions, operators under Alternative E may be required to submit a soil health and restoration plan prior to surface-disturbing activities in fragile or sensitive soils. Alternatives D and E would generally allow the most surface development among the alternatives and the least amount of constraints on resource uses, thereby increasing potential impacts on soils and water compared to the other alternatives. Alternative B would generally allow the least surface disturbance and most constraints on resource uses, decreasing potential impacts on soils and water compared to the other alternatives.

An increase in potential mineral development in KEPA under alternatives D and E could increase water consumption for mineral-related development, drilling, and production, resulting

in adverse effects on water quantity in the analysis area. Oil and gas production can also result in large volumes of produced water that can adversely affect soils and water if not properly disposed. However, the RFD indicates that there would be at most 10 producing oil and gas wells (and four exploratory wells) and a single coal mine during the planning period. As a result, potential impacts on soils and water from mineral development in KEPA would likely be limited and localized.

All the alternatives would prohibit surface-disturbing activities on slopes greater than 30 percent, although Alternative D and Alternative E (with exceptions considered) would require stabilization and runoff measures only on slopes greater than 15 percent, while alternatives B and C would require stabilization and runoff measures on slopes greater than 5 and 10 percent, respectively (no management action for these measures is included in Alternative A). Prohibiting surface-disturbing activities on fragile soils and steep slopes and requiring soil stabilization measures decrease the potential for adverse impacts from soil loss and sedimentation under Alternative B compared to the other alternatives. Based on site-specific conditions, operators under Alternative E may be required to submit a soil health and restoration plan and/or an erosion control plan prior to surface-disturbing activities.

Under Alternative B, prohibiting surface disturbance in drinking water source zones would limit the potential for contamination of groundwater and connected surface waters used by public water systems. Erosion and sedimentation associated with BLM management and activities in the Planning Area could migrate downstream to NPS unit water resources, such as Lake Powell. Under all alternatives, proposed surface-disturbing activities may require additional site-specific NEPA analysis and the BLM would apply mitigation and BMPs such as those identified in Appendix G, *Best Management Practices*, to reduce potential impacts.

Construction of certain structural range improvements, such as water developments, could result in localized surface disturbance and vegetation removal, but may improve livestock distribution in the long term in a manner that minimizes trampling and concentrated grazing on fragile soils and in streams and riparian areas. Alternatives C, D, and E could have the greatest short-term adverse impacts from installation of range improvements, but allow a wider range of techniques to improve livestock distribution compared to Alternative B. Overall, the effects of livestock grazing management on soils and water are highly variable and dependent upon site characteristics and grazing practices. For example, improper livestock grazing can increase the potential for wind and water erosion by reducing vegetative cover, but can also have beneficial effects on soil stability by increasing soil organic matter. Improper livestock grazing, especially near riparian or water sources, can also result in impacts on water quality from transport of E. coli into downstream water resources, including water sources outside of the Planning Area in Glen Canyon NRA and Lake Powell. Transport of E. coli from livestock grazing or human waste into water resources can result in human health and safety concerns when these water sources are used for drinking water, especially in backcountry situations (e.g., Coyote Creek, Escalante River, Paria River). Under alternatives D and E, the NPS, in coordination with the BLM, would take livestock management actions to prevent or minimize adverse impacts on soils, soil function, and biological soil crusts within allotments that extend into Glen Canyon NRA.

None of the alternatives would authorize water developments that would increase livestock numbers.

All alternatives allow for the development and maintenance of trails and routes in limited circumstances and in accordance with the Travel Management Plan (TMP). Surface disturbance

and vegetation removal from trail and route development, and ongoing erosion from existing trail and route surfaces, would have adverse effects on soil and water resources under all alternatives; these effects would be addressed during the TMP development process.

KEPA management under alternatives C, D, and E allows for greater levels of development than under Alternative B (e.g., greater potential for mineral development and ROW permits), which can result in the removal of vegetative cover and the potential for soil compaction, reduced water infiltration, increased runoff, and sedimentation of receiving waterbodies. In general, impacts on soil and water across the three GSENM units would be similar due to their similar management.

Application of soil and water BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect impacts on soil and water. For example, locating development on stable terrain; avoiding or minimizing development in areas with sensitive soils, biological soil crusts, and open water sources; improving or retaining vegetation coverage; and implementing barriers would reduce the potential for increased runoff, erosion, and sedimentation.

Impacts from Vegetation Treatment

Direct adverse impacts on soil and water resources could result from surface disturbance and vegetation removal that occur when conducting mechanical vegetation treatments and prescribed fires. These impacts would be the same as those described in the previous section, but would typically be short term in nature due to the localized and limited extent of disturbances, use of selective vegetation removal and trimming techniques, and the low intensity of prescribed fires. Vegetation treatments and prescribed fires are anticipated to have long-term beneficial impacts from maintaining native plant communities, increasing vegetative cover, and enhancing fire resilience.

Use of chemical vegetation treatments would have similar long-term beneficial impacts as mechanical and prescribed fire treatments, but without short-term adverse impacts from surface disturbance associated with mechanical removal and thinning. However, herbicides could be carried through runoff to surface waterbodies or could infiltrate the soil and come in contact with groundwater resources. Certain herbicides contain chemicals that could contaminate drinking water supplies or have other adverse effects on water quality. The duration of these impacts would vary based on the concentration and residence time of contaminants in affected water sources and sediments.

Impacts on soils and water associated with vegetation treatments vary across the alternatives based on allowable vegetation treatment methods and tools. Alternative B allows only non-intensive vegetation treatments in limited circumstances and requires seeding with native species. Alternative C would allow the full range of vegetation treatments and tools, except chaining. Alternatives D and E would allow the full range of vegetation treatments and tools, including chaining, and treatments would be prioritized in areas where removal of woodland products would improve rangeland health, wildlife habitat, and forage. As a result, alternatives D and E would increase potential impacts on soils and water associated with vegetation treatments, followed by Alternative C, with Alternative B having the least potential for impacts. Alternatives D and E would allow the use of nonnative species where necessary to optimize land health, forage, and productivity in nonstructural range improvements, while Alternative C would allow the use of desirable nonnative species where the probability of success or adapted

seed availability is low, or if desirable nonnative species are needed to support ecological objectives. Use of nonnative species could increase the potential for the spread and establishment of these species, which could affect native vegetation communities and soil/plant interactions. Application of soil and water BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect impacts on soil and water. For example, chemical vegetation treatments would be restricted to control noxious weed species and would only be applied by certified employees or contractors, limiting the potential to inadvertently treat or remove desirable plant communities and vegetation.

Impacts on Monument Objects

Biological soil crusts are monument objects identified as "Biological and Ecological Resources and Processes; cryptobiotic soil crusts" within the Grand Staircase, Kaiparowits, and Escalante Canyons Units of GSENM (refer to Appendix E, *Grand Staircase-Escalante National Monument Objects and Resource Values*).

The direct and indirect biological soil crust impacts and the differences in these impacts across alternatives described above would also generally apply to biological soil crust monument objects. Similarly, the beneficial impacts and protective measures described above in the direct and indirect analysis of impacts on soils would support the proper care and management of biological soil crust monument objects.

In general, alternatives D and E, which increase the potential for surface disturbance and resource use in GSENM, would increase the potential for impacts on biological soil crust monument objects. However, all alternatives generally limit the extent of surface disturbance in GSENM (e.g., withdrawn from mineral entry), and thus all alternatives are anticipated to support the proper care and management of biological soil crusts in GSENM. Alternative B provides additional protection of biological soil crusts by implementing biological soil crust protective strategies for livestock grazing activities in pastures containing more than 50 percent of soils with moderate soil degradation susceptibility, including changing the season of use for grazing as appropriate for areas with biological soil crusts.

In addition, application of soil and water BMPs identified in Appendix G, *Best Management Practices*, would further reduce the potential for direct and indirect impacts on biological soil crusts (e.g., avoid placing salts or supplements in areas with a high percentage cover of biological soil crusts or near areas with fragile or sensitive soils). Under all alternatives, the potential effects of surface-disturbing activities on biological soil crusts will be considered during site-specific permitting and steps taken to avoid impacts on their function or additional stipulations, mitigation, and adaptive management could be applied.

Additionally, monitoring strategies for soils and vegetation described in Appendix I, *Monitoring Strategy,* would ensure the proper care and management of biological soil crust monument objects. For example, conducting routine monitoring of soils and vegetation in accordance with Pellant et al.'s *Interpreting Indicators of Rangeland Health* (Pellant et al. 2005) and continuing to collect frequency and apparent trend data as time and funding allows for soils and vegetation would further support the proper care and management of biological soil crust monument objects.

3.6.2.3 Cumulative Effects

The cumulative impacts analysis area for soil is the Planning Area and directly adjacent areas from which sedimentation and noxious weed dispersion could affect the Planning Area. The cumulative impacts analysis area for water includes the extent of surface water features (e.g., streams) and groundwater resources (i.e., groundwater basins and aquifers) that intersect the Planning Area. Soil and water resources in the cumulative impacts analysis area have historically been altered by water and wind erosion and drought. These areas encompass the range from which soil and water resources may experience direct or indirect effects from management actions and reasonably foreseeable future actions. Proactive vegetation treatment and habitat improvement projects such as the Paria River Watershed Habitat Project result in overall beneficial effects on soils, water, and ecological conditions in the analysis area and within the watershed.

Human activities, including past mining, recreation, and grazing, have also affected soil and water through the damage or removal of protective biological soil crusts and vegetation that exposes underlying soils and leads to erosion and sedimentation into waterbodies. However, past and present development in most portions of the cumulative impacts analysis areas have been limited by the BLM's designation of WSAs, designation of GSENM, and *Kane County Land Use Ordinance, Chapter 27, Escalante Region Multiple Use/Multiple Functions Grazing Zone* (last amended September 22, 2014), which establishes areas that are open and generally undeveloped with limited human habitation (Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*). Reasonably foreseeable actions that could result in surface disturbance and associated contributions to cumulative impacts include buried pipelines (e.g., Lake Powell pipeline), vegetation treatments (e.g., Upper Paria Watershed vegetation treatments), and mineral development in the analysis area (e.g., Alton Coal Tract).

The potential for adverse impacts on soil and water resources is limited within GSENM due to general limitations on surface disturbance and resource use, and cumulative impacts would be similar across all alternatives and the GSENM units. Under all alternatives, erosion and sedimentation associated with BLM management and activities in the analysis area could migrate downstream to NPS unit water resources, such as Lake Powell. Increased use of groundwater resources for mineral development and other present and reasonably foreseeable projects could reduce the flow of water and transport of sand to the Colorado River, affecting downstream rivers and National Parks, such as Grand Canyon National Park. However, given the relatively limited outlook for mineral development identified in the RFD, contributions of these impacts from the alternatives would likely be minimal.

As described in Section 3.1.1.1, *Climate Change*, warming between 33° F (0.6° C]) and 34° F (1.2° C) is expected throughout the region by 2060 (Bryce et al. 2012) and precipitation levels are expected to decline throughout much of the year during the 2015 to 2030 time period, resulting in severe drought in some areas. These climatic changes may affect soil and water resources through severe drought and variable and extreme weather patterns that may occur within all or parts of the Planning Area. Impacts from climate change may cause negative feedback loops between multiple resources. Drought causes stress to vegetation by changing timing of and reducing available water for plants and can lead to decreased cover and/or changes in plant communities. Decreased cover and increased soil temperatures can increase risk of wind and water erosion and change sediment and water dynamics within a watershed.

Coupled with extreme weather events, the erosion risk may be magnified. Drought may also decrease the amount of water available to vital groundwater and riparian resources, which, in turn, may affect riparian vegetation communities, recreation opportunities and experiences, and wildlife water availability and habitats. Reduced water availability in streams, riparian areas, and watering holes can lead to concentrated livestock and wildlife uses in those areas, further affecting the resource.

Alternatives A and B provide the most protection of soil resources associated with potential impacts of climate change by minimizing surface disturbance and development that could release emissions that contribute to climate change. Alternative C provides moderate protection of potential impacts from climate change by balancing resource protection and use. Alternatives D and E generally provide the least protection from potential impacts of climate change, as these alternatives increase the potential for surface disturbance and development projects that could result in emissions that contribute to climate change. However, given the global nature of climate change and the limited amount of development anticipated in the Planning Area, as described in the RFD, impacts from climate change on soils and water would likely be similar across the alternatives.

3.7 Vegetation and Fire and Fuels Management

3.7.1 Vegetation Affected Environment

The analysis area for upland and riparian vegetation, noxious weeds, and nonnative invasive plants is the Planning Area (Map 20). The Planning Area occurs within the Colorado Plateau ecoregion. This ecoregion has experienced extensive fragmentation and degradation of its native vegetation cover over the past 50 years due to various activities including oil and gas leasing, mining, recreation, livestock grazing, off-road vehicle usage, and other development.

Existing vegetation types evolve from site-specific topography, soil type, and climactic conditions. Vegetation types in the Planning Area are described using the National Vegetation Classification System macrogroups identified in Table 3.7-1 below. Of the vegetation types present within the Planning Area, ten are upland types and two are riparian and/or wetland types.

Table 3.7-1. Acreage of Vegetation Types within the Planning Area

Vegetation Type[1]	Grand Staircase Unit (acres)	Kaiparowits Unit (acres)	Escalante Canyons Unit (acres)	KEPA (acres)
Rocky Mountain Two-Needle Pinyon-Juniper Woodland	138,817	326,832	65,004	349,983
Intermountain Basin Cliff, Scree, and Rock Vegetation	37,281	115,641	124,758	179,136
Great Basin and Intermountain Dry Shrubland and Grassland	5,038	19,810	39,654	187,484
Great Basin and Intermountain Tall Sagebrush Shrubland and Steppe	27,291	50,661	9,787	87,994
Great Basin Saltbush Scrub	439	20,547	799	44,185
Cool Semi-Desert Alkali-Saline Wetland[2]	103	3,547	60	8,055

Vegetation Type[1]	Grand Staircase Unit (acres)	Kaiparowits Unit (acres)	Escalante Canyons Unit (acres)	KEPA (acres)
Northern Rocky Mountain Lower Montane and Foothill Forest	581	7,363	4	4,801
Rocky Mountain and Great Basin Flooded and Swamp Forest[2]	509	1,163	2,617	855
Recently Disturbed or Modified	751	984	3	5,536
Rocky Mountain Cliff, Scree and Rock Vegetation	103	4,013	73	1,656
Southern Rocky Mountain Montane Grassland and Shrubland	479	1,747	71	931

Source: Montana Natural Heritage Program 2014
[1] Vegetation types are described using the National Vegetation Classification System macrogroups.
[2] Riparian or wetland vegetation type
KEPA – Kanab-Escalante Planning Area
Note: Riparian and wetland areas depicted on Map 18 and Map 19 are based on regional data sets and may not accurately reflect on-the-ground wetlands and riparian areas. Site-specific assessments of wetland and riparian occurrence would be conducted if development proposals or projects are considered in these areas.

Noxious weeds are plant species that are harmful to the local vegetation community and have been designated as noxious by a Federal, State, or local authority. Nonnative, invasive plants are not native to the area where they are growing and have the potential to become a dominant or codominant species that out-competes other native species if they are not controlled. Invasive plants are not officially designated. Both noxious weeds and invasive plants are found throughout the Planning Area. Refer to Chapter 2, Section 2.2.11.3, *Noxious Weeds and Nonnative Invasive Plants* (pages 78–82), and Table 19 (page 80) in the AMS (BLM 2018b) for more information on invasive plants and noxious weed occurrence in the Planning Area.

The BLM completed evaluations of three ecosystem attributes (soil/site stability, hydrologic function, and biotic integrity) at 500 locations in and adjacent to the Planning Area in 2006, 2013, and 2014. Refer to Chapter 2, Section 2.2.11.1, *Upland Vegetation* (pages 68–74), in the AMS (BLM 2018b) for a description of ecological sites and more information on the results of these evaluations.

The BLM conducted proper functioning condition (PFC) assessments, which is a qualitative method for assessing the condition of riparian-wetland areas, on 192 flowing waters (e.g., creeks, streams, rivers) and 142 still waters (e.g., ponds, lakes, ephemeral pools) throughout the Planning Area between 2000 and 2013. Refer to Chapter 2, Section 2.2.11.2, *Riparian Vegetation* (pages 74–78), and Appendix 7, *Vegetation* (pages 315–326), in the AMS (BLM 2018b) for more information on the PFC method and on results of these assessments.

The BLM inventoried more than 4,600 acres in the Planning Area to assess the spread of invasive plants and noxious weeds. The most prevalent invasive plant cover types in the inventoried area were tamarisk, Russian olive, yellow clover, and cheatgrass. Refer to Chapter 2, Section 2.2.11.3, *Noxious Weeds and Nonnative Invasive Plants* (pages 78–82), in the AMS (BLM 2018b) for more information on results of these inventories.

Upland and riparian vegetation communities in the Colorado Plateau ecoregion and within the Planning Area have historically been degraded by invasive species and the spread of uncharacteristic native vegetation (e.g., pinyon-juniper expansion). The greatest effects from

disturbances on upland vegetation have occurred in the big sagebrush shrubland community, and the BLM anticipates that climate change may exacerbate these effects in the future. Riparian species have been particularly affected by livestock grazing; however, assessments have indicated that BLM management actions to correct livestock grazing issues in riparian areas have improved rangeland health, and that the condition of riparian and wetland vegetation is improving on allotments assessed (Stager's Environmental Consulting 2014). The BLM expects that increases in ground disturbance, human visitation, and routine monument operations will continue to result in noxious weed and invasive plant establishment in the Planning Area; however, focused efforts to control noxious and invasive species have limited the spread and reduced the size of invasive plant populations in the vicinity of the Planning Area.

3.7.2 Vegetation Environmental Consequences

3.7.2.1 Vegetation Methods and Assumptions

This section describes direct, indirect, and cumulative effects on vegetation and vegetation community health from implementation of the management alternatives. Impacts on vegetation would primarily result from the following impact mechanisms:

- Surface disturbance and vegetation removal
- Spread of noxious weeds, invasive plant species, and pests and disease
- Vegetation treatments (including prescribed fire) and habitat restoration activities

Effects on vegetation and vegetation community health from these impact mechanisms are generally described in a qualitative fashion, with acreages provided where appropriate to draw distinctions among the alternatives.

This analysis uses the following assumptions:

- The degree of impact attributed to any one disturbance or series of disturbances would depend on the location of the disturbance within the watershed; the type, time, and degree of disturbance; existing vegetation conditions; precipitation; and mitigating actions applied to the disturbance.
- Prescribed fire would result in short-term, adverse impacts on vegetation; however, vegetation communities would generally benefit from prescribed fire's long-term effects of increasing age diversity and reducing the potential for stand-replacement wildfires.

3.7.2.2 Direct and Indirect Effects

Management of forestry and woodland products, lands and realty, livestock grazing range improvements, mineral development in KEPA, recreation, renewable energy development in KEPA, and trails and travel would result in direct adverse impacts on vegetation through surface disturbance and vegetation damage/removal. In contrast, management designed to improve land health, such as fuels treatments, vegetation treatments, fish and wildlife habitat management, and soils and watershed enhancement activities, would cause surface disturbance and vegetation removal in the short term, but would result in long-term, direct and indirect beneficial impacts on vegetation resources. These long-term, beneficial impacts would generally be associated with controlling the spread and establishment of invasive species, allowing for the persistence of desired native vegetative communities with a diversity of species across the landscape, and enhancing and restoring ecological processes and functions.

Management decisions that limit the potential adverse effects on vegetation from resource uses by instituting constraints on those uses include special designations (e.g., ACECs that limit surface disturbance for the protection of ACEC values), certain recreation management areas (e.g., SRMAs and RMZs that limit surface disturbance to meet recreation objectives), lands with wilderness characteristics (e.g., limits on surface disturbance and activity to preserve naturalness and outstanding opportunities for solitude), and resource-/area-specific protective closures (e.g., limitations in relict plant communities, limitations on sensitive soils).

Impacts from Surface-Disturbing Activities and Vegetation Removal

Short-term, direct, adverse impacts on vegetation could result from the direct removal of vegetation, including harvest of live plant material, harvest of seeds, and consumption of plant materials by livestock and wildlife. Long-term, direct, adverse impacts would result from the permanent loss of desirable vegetation from the development of permanent features such as utility ROWs, renewable energy facilities in KEPA, mineral development in KEPA, roads, and recreation sites. Surface disturbance and vegetation removal can indirectly increase erosion and sedimentation in the watershed. Erosion and sedimentation result in loss of soil to support vegetation and can have pronounced effects in riparian and wetland communities where physical or chemical alterations from sediment deposition can shift vegetation community composition.

Indirect, adverse impacts associated with resource development activities could include increased spread and establishment of nonnative, invasive species that out-compete desired vegetation, increased degradation of suitable native plant habitat from soil compaction and soil disturbances by livestock and vehicle use, human trampling, and other land management activities. Long-term, indirect impacts that create adverse conditions for vegetation could result from the maintenance of roads, trails, and ROWs; unmanaged or poorly managed livestock grazing allotments; long periods of drought; and high-intensity/high-frequency wildland fires.

Management actions that limit surface disturbance by establishing ROW avoidance and exclusion areas, managing areas as VRM Classes I or II, applying surface-use stipulations to mineral and renewable energy development in KEPA, or through other means would reduce the potential for adverse impacts. Long-term, beneficial impacts could result from vegetation treatments, habitat restoration activities, and wildland fire and fuels management actions that help to maintain, enhance, or restore overall health, composition, diversity, and resiliency in vegetation communities.

In general, alternatives D and E would result in the greatest potential for vegetation impacts, followed by alternatives C and B, with Alternative A having the least potential for impacts. Differences between the alternatives are driven by the degree of use restrictions on mineral development in KEPA, ROW avoidance and exclusion acreages, development of range improvements, areas available for livestock grazing and allocated AUMs, the creation of facilities and infrastructure for OHV use and recreation, and the extent and management of special designations in the alternatives. Alternatives D and E would generally increase the potential for impacts on vegetation because they contain the fewest acres of special designations (e.g., no ACECs), the fewest constraints and restrictions on resource uses (e.g., mineral development), the greatest area available for livestock grazing, and the fewest resource-specific management decisions for protection of soils and vegetation. Under Alternative B, surface-disturbing activities would be prohibited during sensitive big game

seasons, within fragile or sensitive soil areas, and within Drinking Water Source Protection Zones, which would reduce potential impacts on vegetation in these areas compared to the other alternatives (see Table 3-1). In general, impacts from surface-disturbing activity and vegetation removal across the three GSENM units would be similar based on the similar management in the three units.

Application of vegetation BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect adverse impacts on vegetation. For example, requiring equipment to be cleaned prior to operating on BLM-administered surface lands and requiring all seed and vegetation materials to be certified as weed free would reduce potential impacts on vegetation from the establishment and spread of noxious weeds. Similarly, applying BMPs for reclamation and restoration would improve the potential for reclamation success, thereby reducing long-term, adverse impacts on vegetation.

Impacts from the Spread of Noxious Weeds, Invasive Plant Species, and Pests and Diseases

Control of noxious weeds, invasive plant species, and pests and diseases is a primary concern when managing for the health of vegetation communities. Management that limits the spread of noxious weeds, invasive plant species, and pests and diseases, or that provides for their control/eradication, would benefit vegetation community health. Adverse impacts would result from management actions, resource uses, and permitted activities that contribute to the introduction or spread of these species, or that limit invasive species control activities in the Planning Area. Introduction and spread of noxious weed and invasive plant seeds or vegetative materials can occur as a result of reclamation and seeding projects, wildlife use, livestock movement, OHV travel, wind, or water from an area of infestation to an area not previously infested.

Although all alternatives would allow approved weed-control methods to control noxious weeds and invasive species, the management alternatives take differing approaches to managing the spread of noxious weeds, invasive plant species, and pests and diseases. Alternative B only allows vegetation treatments in limited circumstances and emphasizes natural processes and the use of native species during restoration. Alternative A would apply an approach similar to Alternative B, but would allow the use of machinery to control areas of noxious weeds and invasive plant species presenting a substantial threat to resources. These approaches could limit the areas where vegetation treatments could occur to control invasive species. Limiting the ability to implement the full range of available management to treat noxious weeds, invasive plant species, and pests would reduce short-term surface disturbance of vegetation communities during treatment, but could result in long-term, adverse impacts if infestations spread. Alternatives C, D, and E allow a greater range of vegetation treatment options, increasing short-term, adverse impacts from surface disturbance but increasing long-term, beneficial impacts. Impacts of Vegetation Treatments (Including Prescribed Fire) and Habitat Restoration Activities

Vegetation, watershed, and habitat management that restores, maintains, and/or enhances vegetation communities would result in long-term, beneficial impacts. Such management may include developments or maintenance of existing watershed improvement projects, habitat improvement projects for wildlife, requirements for restoring/reclaiming disturbed areas, and upland vegetation treatments to remove areas of pinyon-juniper encroachment. This

management may also include appropriate use of prescribed fire and fuel treatments to reduce potential for high-intensity fires that damage the vegetation communities and allow noxious weed and invasive species spread. Short-term, adverse impacts may also occur during certain vegetation treatments where they result in substantial surface disturbance. For instance, fuel reduction treatments and prescribed fire would result in short-term disturbances to forest and woodland communities, but could have long-term, beneficial impacts on species composition and diversity.

Long-term, indirect, beneficial impacts could also result from management under other program areas intended to maintain or improve vegetation health, such as proper livestock management techniques and restrictions on grazing in riparian areas or requirements for timely restoration of decommissioned roads and other disturbed areas.

Indirect, adverse impacts can occur from management that prevents the BLM from addressing problematic conditions (e.g., insect epidemics or fuel buildup) or prevents natural processes (e.g., stand regeneration, insect pollination). These factors can adversely affect structure, species composition/diversity, vigor, health, or vegetation community type, causing a decline in abundance or distribution of certain vegetation communities.

Alternatives D and E, C, and A (in order of most to least permissive) permit a broader range of vegetation and habitat management techniques than Alternative B, resulting in a greater potential for short-term, adverse and long-term, beneficial impacts on vegetation communities and health. All alternatives would allow habitat treatments that benefit wildlife species and would actively manage big-game habitat. Vegetation treatments under all alternatives would result in some short-term disturbance to existing vegetation; however, vegetation treatments could enhance vegetation in the long term. Alternatives A and B also limit vegetation restoration activities to native species, resulting in potential long-term benefits to native vegetation community enhancement, but eliminating potential short-term benefits from the ability to use desirable nonnative species to accelerate restoration activities. In contrast, alternatives D and E would allow the use of nonnative species where necessary to optimize land health, forage, and productivity in nonstructural range improvements. Alternative C would allow the use of desirable nonnative species in limited situations as long as they support ecological objectives and protect GSENM/KEPA resources (e.g., stabilize soils), and the probability of success or adapted seed availability is low. Use of nonnative species could increase the potential for the spread and establishment of these species, which could affect native vegetation communities.

In general, alternatives that include more management restrictions and protections for resources (e.g., visual resources, cultural resources) could reduce areas available for vegetation treatments and reduce vegetation management flexibility, resulting in adverse impacts. Alternatives D and E would generally have fewer management restrictions for resources and fewer resulting impacts on vegetation management and treatments, compared to the other alternatives. Presidential Proclamation 9682 clarified that the BLM may authorize ecological restoration and active vegetation management activities in the GSENM units. In general, impacts on vegetation communities and health across the three GSENM units would be similar based on the similar management in the three units.

Impacts on Monument Objects

Several vegetation resources are described as "Biological and Ecological Resources and Processes" monument objects within the Grand Staircase, Kaiparowits, and Escalante Canyons Units of GSENM, including relict plant communities and endemic plants (see Appendix E, *Grand Staircase-Escalante National Monument Objects and Resource Values)*.

The direct and indirect vegetation resource impacts and the differences in these impacts across alternatives described above would also generally apply to vegetation resource monument objects when vegetation monument objects, such as relict plant communities and endemic plants, could be affected by the management and associated impacts in GSENM. Similarly, the beneficial impacts and protective measures described above in the direct and indirect analysis of impacts on vegetation resources would support the proper care and management of monument objects.

Alternatives A and B would generally result in the greatest potential for conservation, protection, and restoration of the vegetation monument objects by decreasing resource use and development potential and providing resource-specific protective management. The beneficial direct and indirect impacts and protective restrictions described above under alternatives A and B would also result in the protection of the diversity of unique and endemic vegetation communities in GSENM, while also preserving intact ecological values. Under all alternatives, BMPs would be implemented to avoid surface-disturbing activities or placement of permanent facilities in areas where there are known populations of endemic plant species. Surveys for endemic plant species may also be required during site-specific permitting in areas where there are known or likely occurrences of endemic plants.

Unique relict plant communities and hanging gardens would be protected under all alternatives from disturbance associated with vegetation restoration methods and new water developments; however, the most protection would be provided under alternatives A and B, which place the greatest amount of restrictions on activities in these areas, followed by Alternative C and then alternatives D and E. Alternative B would prohibit surface-disturbing activities and permanent facilities within 0.5 mile of riparian and wetland areas, offering greater protection to riparian areas, where hanging gardens occur, compared to alternatives A, C, D, and E. Alternatives C, D, and E would provide fewer protections to riparian areas by allowing surface-disturbing activities that occur at least 330 feet from riparian areas and allowing larger group sizes and pack animals.

Smaller group size limits could also reduce potential impacts (e.g., trampling, collection) on biological and ecological resource objects, compared to alternatives with larger group sizes. Within WSAs, Alternative B would provide the greatest protection by limiting group size to 8 people, compared to alternatives C, D, and A, which would limit group sizes to 12, 25, and 12–25 people in WSAs, respectively. Similar to Alternative D, Alternative E would limit group size to 25 people within WSAs (unless otherwise noted in SRMA/RMZ management actions), but would allow more flexibility by adjusting group size limits on a case-by-case basis for consistency with group size limits on adjacent lands (e.g., NPS land and Kanab Field Office land).

All alternatives generally limit the extent of surface disturbance in GSENM (e.g., withdrawn from mineral entry), and thus all alternatives are anticipated to support the proper care and management of biological and ecological resource monument objects (including relict plant

communities and endemic plants) by limiting new development and disturbance in GSENM. Additionally, all action alternatives require application of appropriate BMPs for the protection of biological and ecological resources as identified in Appendix G, *Best Management Practices* (e.g., avoiding facilities, surface disturbance, and vegetation restoration methods in relict plant communities and hanging gardens, unless needed for noxious weed removal), which would provide for the proper care and management of biological and ecological resource monument objects and their associated vegetation communities. Additionally monitoring strategies for biological and ecological resources described in Appendix I, *Monitoring Strategy*, would ensure the proper care and management of monument objects (e.g., monitoring hanging garden conditions for disturbance or loss as a result of human or natural causes, and routine monitoring of soil and vegetation conditions).

3.7.2.3 Cumulative Effects

The cumulative impacts analysis area for vegetation is the Planning Area and areas directly adjacent to the Planning Area (e.g., NPS units) where noxious weeds, invasive species, and pests could spread. Vegetation communities in the Planning Area have historically been altered by the spread of invasive species and pinyon-juniper expansion. Livestock grazing has also had impacts on vegetation, such as changes in plant species composition (Milchunas 2006). Other common adverse cumulative impacts on vegetation and changes in fire regime in the Planning Area include increased trampling due to human visitation and proliferation of OHV use. Trending increases in visitation and recreation use in the analysis area are anticipated to increase potential trampling and OHV use and associated contributions to cumulative impacts.

Focused efforts in the analysis area have limited the spread and reduced the size of noxious weed and invasive species populations in some areas. For example, Glen Canyon NRA regularly conducts invasive vegetation management projects, including mechanical removal of invasive species and native plant restoration (Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*). Past, present, and reasonably foreseeable vegetation treatment projects that could contribute to cumulative impacts include Upper Paria Watershed vegetation treatments, Skutumpah vegetation treatments, and other seeding and vegetation restoration projects in the analysis area. Proactive vegetation treatment and habitat improvement projects such as the Paria River Watershed Habitat Project result in overall beneficial effects on vegetation and ecological conditions in the analysis area and within the watershed.

Vegetation conditions in areas directly adjacent to the Planning Area could be improved through grazing management, vegetation treatments, range improvements, and weed prevention and control measures. Among the alternatives, Alternative B would contribute the least to cumulative vegetation impacts and alternatives D and E would contribute the most to cumulative vegetation impacts.

BLM management for vegetation treatment and restoration may result in incompatible management between BLM-administered surface land and adjacent lands. In particular, management to allow the use of nonnative species for restoration activities under alternatives C, D, and E is inconsistent with management in the adjacent Glen Canyon NRA, which only allows restoration with native species. As a result, use of nonnative species on BLM-administered surface land in certain circumstances under alternatives C, D, and E could result

in adverse impacts on NPS-managed vegetation resources in lands adjacent to the Planning Area.

3.7.3 Fire and Fuels Management Affected Environment

The analysis area for fire and fuels management is the Planning Area. The BLM's fire policy requires that current and desired resource conditions be described in terms of fire regimes, the frequency with which fires naturally occur in a particular ecosystem before Euro-American settlement and fire suppression began, and Fire Regime Condition Classes (FRCCs), the classification of the amount of departure of an area or landscape from historic to present conditions. This departure from the natural state can be a result of changes in one or more ecosystem components such as fuel composition, fire frequency, and/or other ecological disturbances (BLM 2018b).

The Planning Area contains lands in Fire Regimes I (low- to mixed-severity fires with a frequency interval of 0–35 years), II (high-severity fires with a frequency interval of 0–35 years), and V (high-severity fires with a frequency interval of 200+ years), but no lands in Fire Regime III (mixed-severity fires with a frequency interval of 35–100+ years) and only a limited area (104 acres) in Fire Regime IV (high-severity fires with a frequency interval of 35–100+ years). The fire regime category is largely driven by vegetation types found within the Planning Area (sagebrush, salt desert scrub, pinyon-juniper, and oak). Refer to Appendix 3, *Fire and Fuels* (pages 257–262), in the AMS (BLM 2018b) for additional information on vegetation types associated with fire and fuels. The dominance of Fire Regimes I, II, and V, along with the types of vegetation found within the Planning Area, is predictive of future mixed-severity and high-severity wildfire.

Approximately 94 to 97 percent of the Planning Area is in FRCC 3, indicating that fire regimes are substantially altered from their historical range. The remaining portions of the Planning Area are in FRCC 2, indicating lands that have been moderately altered by either decreased or increased fire frequency. The Escalante Canyons Unit and KEPA have the largest number of acres in FRCC 2 (5 percent) likely due to recent fires and proactive vegetation treatments. Refer to Chapter 2, Section 2.2.4, *Fire and Fuels* (pages 31–39), in the AMS (BLM 2018b) for acreages associated with each administrative unit.

In the Planning Area, there is potential for future wildfires. Fire frequency and fire severity are expected to be higher than historical levels, as reflected in the FRCC 2 and FRCC 3 designations. The invasion of annual grasses and conversion of conifer woodlands into shrub- and grassland and the increased live and dead fuel loads within conifer stands are the primary factors for this potential trend. Increased recreational and backcountry use in the Planning Area could also increase the risk of human-caused wildfires. KEPA is likely the most at risk for more frequent wildfires, based on its vegetation conditions (BLM 2018b). Warming and prolonged drought associated with global climate change (refer to Chapter 2, Section 2.2.2, *Climate Change* [pages 13–15], in the AMS [BLM 2018b]) may exacerbate both fire frequency and fire severity.

Due to the low number of past wildfires within the Planning Area, active emergency stabilization and rehabilitation program efforts have not been utilized in these areas. However, the number of fuels management projects within the Planning Area has increased in recent years, especially within KEPA. Treatment types have been primarily mechanical (e.g., mowing and mechanical mulching), with the largest numbers of treatments occurring within KEPA.

There are no proactive treatment records for the Kaiparowits or Escalante Canyons Units. Prescribed fire has only been utilized on 393 acres in the Grand Staircase Unit and 880 acres in KEPA over the past 20 years (BLM 2018b).

3.7.4 Fire and Fuels Environmental Consequences

3.7.4.1 Fire and Fuels Methods and Assumptions

This section describes direct, indirect, and cumulative effects on fire and fuels management from implementation of the management alternatives. Impacts on fire and fuels management were determined by assessing potential changes in the incidence of ignition, fire size or intensity, or the ability to effectively suppress wildfire. Actions that would contribute to an increase in the incidence of wildland fires or that would limit the ability to effectively fight wildland fires are considered adverse impacts on fire and fuels management. For example, management actions limiting available fire-suppression tactics, thereby resulting in larger burn areas or more-intense fires, would be considered an adverse impact. Conversely, actions contributing to a decrease in the incidence of resource-damaging wildland fires or enhancing the ability to fight fires are considered beneficial impacts.

Impacts on fire and fuels management, including wildland fire-suppression costs, would primarily result from the following impact mechanism:

- Management actions affecting wildfire suppression and management

This analysis uses the following assumptions:

- Fire is an important, functional, and natural disturbance in many of the ecological systems found in the Planning Area; excluding fire may result in accumulation of vegetative fuels, leading to fires with uncharacteristic behavior and greater impacts.
- Past management, such as wildfire suppression and improper livestock grazing, have contributed to current fire regimes and FRCCs.
- Wildland fires that do not threaten human life, private properties, or important resources can be used as a tool to reduce fuel loads, improve plant communities, and enhance wildlife habitats.
- Fire and fuels management strategies and methods are intended to support protection, maintenance, and enhancement of objectives for vegetation, wildlife habitat, and other resources, as well as the protection of private property and resources next to BLM-administered surface lands. Restricting treatment strategies and methods would limit the ability to reduce hazardous vegetative fuels.
- As under current conditions, the majority of fires that start in the Planning Area would continue to occur as a result of natural lightning ignitions.

3.7.4.2 Direct and Indirect Effects

Management actions that restrict fire and fuels management would be considered direct impacts. All alternatives have the potential to affect wildfire suppression and management, which could also affect protection of other resources. For example, fires burning more acreage for longer periods emit more particulate matter into the air, thereby adversely affecting air quality. In addition, fire can result in both adverse and beneficial effects on rangeland health, wildlife habitat quality and quantity, and plant community health. Impacts on other resources from fire management are addressed under the appropriate resource sections. Potential

changes in wildland fires (including their size, intensity, or destructive nature), fire-suppression costs, and fuel loading due to management actions under the alternatives would be considered indirect impacts on fire and fuels management.

Impacts from Management Actions Affecting Wildland Fire Management

Management can restrict the use of heavy equipment in certain strategic locations, which would limit the ability to fight wildfires that threaten critical resource values and special status species habitat. Restricting the use of heavy equipment to suppress fires may result in long-term, adverse, direct impacts on the management and associated suppression costs of wildland fires by increasing the need for non-heavy equipment fire-suppression resources, such as hand crews, over a longer period of time. This and similar limitations may allow fires that are detrimental to landscapes to grow larger and result in more long-term, adverse, indirect impacts in terms of acres burned.

Livestock grazing management would result in short-term and long-term, indirect impacts on fire and fuels management. Livestock grazing would primarily affect the distribution, amount, height, and vigor of herbaceous species such as perennial grasses, which can determine fire characteristics. Grazing would be beneficial to fire-suppression efforts by reducing fuels. A decrease in fire spread may result in an accumulation of larger fuel sources such as shrub vegetation between fire events, which may contribute to larger fires in the long term. Livestock grazing and associated vegetation effects may also reduce flame length, fire-line intensity, and rate of spread, which would result in short-term, beneficial, indirect impacts on suppression activities. Fire-line intensity and flame length are important measures of potential suppression success.

Trails and travel management would result in both adverse and beneficial impacts on management of wildland fires. Travel designations provide access throughout the Planning Area, which may result in long-term, adverse, indirect impacts by increasing the incidence of human-caused fires. Increased access may also increase the potential for fire in more remote locations that are more difficult to respond to and control, thereby increasing suppression costs. Alternatively, the presence of OHV routes may result in long-term, beneficial, indirect impacts by increasing access, reducing response time, providing management flexibility, and reducing suppression cost.

Recreational activities can result in adverse impacts on wildland fire suppression due to the increased likelihood for wildfire ignitions in SRMAs and ERMAs, where both concentrated and dispersed recreational uses increase the likelihood for unintended ignitions. This impact would be similar across all alternatives but may be slightly increased under alternatives B, C, and E due to the increased acreage of SRMAs and RMZs under these alternatives. Overall, trending increases in visitation and recreation use in the Planning Area would increase potential for unintended ignitions under all alternatives.

Utility corridors and authorization of ROWs (e.g., roads) may result in long-term, beneficial, indirect impacts on fire and fuels management by removing or reducing built-up fuels and by serving as fuel breaks and fire lines. Utility corridors and access roads authorized through ROW designations may also result in long-term, beneficial, indirect impacts by providing access for fire-suppression resources and other fire and fuels management activities. The designation of ROWs and increased incidence of human presence associated with ROW construction and use

can also result in a short-term, adverse, indirect impact by increasing the potential for fires in the Planning Area.

Slopes, soil types, distance from riparian areas, and other factors associated with these resources all affect the options available for wildland fire and fuels management. Short- and long-term, adverse, direct impacts would result from limited or restricted access of wildfire-suppression equipment and personnel in resource areas managed with restrictions for surface-disturbing activities or areas identified as having fragile soils. Long-term, adverse, indirect impacts associated with restrictions on surface-disturbing activities and fragile soils include further increases in high-severity fires due to fuel loading, increased departures from historical fire regimes, reduced fire management options, and increases in fire-suppression costs.

While WSA management could result in some long-term, adverse, direct impacts on fire suppression by limiting potential suppression actions and access in these areas, fires may be contained within roads surrounding the designated areas. Due to the relatively similar acreage and management of WSAs across the alternatives, impacts would be expected to be similar across the alternatives. ACEC designations in KEPA may limit fire-suppression actions if roads are closed and reclaimed to protect the identified relevance and importance (R&I) values of the ACEC. The reduction in roads to access wildfires may restrict suppression tactics and allow fires to grow larger and more costly and potentially cause additional resource damage and threat to health and human safety, especially in wildland-urban interface areas. These impacts would be greatest under Alternative B and Alternative C, which designate the greatest area of ACECs in KEPA.

In general, the potential impacts affecting wildfire suppression, management, and cost associated with special designations and resource protection described above would be greatest in Alternative B, followed by alternatives A and C, respectively, with alternatives D and E equally having the least impacts due to the least amount of special designations and least-restrictive resource-specific protective measures. Conversely, the potential for increased ignition sources, access for wildfire suppression, and other impacts associated with increased access and resource use would generally be greatest under alternatives D and E, followed by alternatives C and B, with Alternative A having the least potential for effects due to the least amount of anticipated development (e.g., ROWs, mineral development in KEPA). However, it should be noted that due to the remoteness of the Planning Area, there have been very few human-caused fires in the GSENM units over the past 17 years. The majority of fires in the GSENM units have been caused by lightning during the years for which fire data are available. Refer to Chapter 2, Section 2.2.4.2, *Current Condition* (pages 31–36), in the AMS (BLM 2018b) for more information on fire occurrence.

Resource management actions that place limits on surface disturbance and road development within GSENM boundaries could have adverse impacts on suppression tactics and wildfire management. In general, impacts on fire and fuels management across the three GSENM units would be similar based on the similar management in the three units. Application of fire and fuels BMPs identified in Appendix G, *Best Management Practices,* would generally reduce the potential for direct and indirect, adverse impacts on resources within both GSENM and KEPA.

All action alternatives include a decision to modify the existing Fire Management Plan (FMP) to be consistent with the decisions in these RMPs. Revision of the FMP would ensure that that FMP is consistent with the fire management and suppression decisions in these RMPs. The FMP revision would address a spectrum of management strategies including wildfire

suppression, wildland fire use, prescribed fire, non-fire fuel treatments, and emergency stabilization and rehabilitation. The revised FMP would result in long-term, beneficial, indirect impacts by creating a document that provides for clear fire management direction that is compliant with national and interagency direction and the management decisions described in the ROD for the RMPs. The revised FMP would further the ultimate goals of improving firefighter and public safety, reducing fuel loads, and maintaining the ecological functions of landscapes within GSENM and KEPA.

3.7.4.3 Cumulative Effects

Rather than following administrative boundaries, wildland fires burn based on fuel availability, weather, and topography. Because of the continuous nature of vegetative fuels and fire occurrence in the Planning Area, fire management activities could affect fire management and resources outside of the Planning Area. For example, there is potential for fires that start or burn on BLM-administered surface lands to spread to adjacent NPS, U.S. Forest Service, private, and State lands. As a result, the cumulative impacts analysis area for fire and fuels management is the level four hydrologic subbasins within and immediately adjacent to the Planning Area. Past and present management plans that affect resource uses and fire management in the analysis area (e.g., Kane County Comprehensive Plan) and natural events (e.g., fire, drought) have altered the condition of vegetation and natural fire regimes across the landscape. Examples include increases in human population, fire-suppression activities, vegetation treatments, improper livestock grazing, noxious and invasive weed spread, drought, and insect and disease outbreaks. Refer to Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*, for more information.

Urban development and recreation in the cumulative impacts analysis area are expected to increase over time, creating additional potential ignition sources and increasing the probability of wildland fire occurrence. The wildland-urban interface is a high-priority suppression area, and suppression in the wildland-urban interface can be more dangerous, time-consuming, and expensive than suppression in undeveloped areas. Additional wildland-urban interface areas resulting from residential expansion would increase the need for hazardous fuels reduction projects and associated funding in order to reduce the risk of wildland fires burning from BLM-administered surface lands onto the wildland-urban interface. Additional fire-suppression resources could also be needed, including Federal, State, and local agency resources.

Increasing access and development on both BLM-administered surface lands and adjacent lands increases the probability of human-caused ignitions and can require costly suppression efforts to protect life, property, and infrastructure. Reasonably foreseeable actions for coal and other mineral development (e.g., Alton Coal Tract) create safety issues during wildland fires, including evacuations, unknown hazardous and flammable materials such as fuels, and lubricating fluids associated with equipment and onsite storage facilities. These issues can add to the suppression costs and complexity in mineral development areas.

Changing land use patterns and increased recreation and visitation would also modify vegetative communities and introduce new vectors for the spread of noxious weeds and nonnative vegetation species. These introduced species could eventually alter the fire regime of certain areas and increase the frequency, size, and intensity of wildland fires. However, a variety of past, present, and reasonably foreseeable plans would decrease the potential for these impacts, such as the Programmatic Noxious Weed and Invasive Plant Management Plan.

Live and dead fuel loadings in forest stands and conifer/juniper encroachment into aspen and higher elevation sagebrush communities is anticipated to continue under the current management of Alternative A. As a result, the potential for uncharacteristic wildfire effects would continue under Alternative A, when combined with other land uses and past, present, and reasonably foreseeable future actions. Generally, alternatives B and C would limit the amount of human access, vegetation treatments, grazing, and surface disturbance, thereby reducing the incidence of wildland fires but also limiting the ability to effectively fight and manage wildland fires as compared to alternatives D and E. In general, the effects of alternatives B and C, when combined with other land uses and past, present, and reasonably foreseeable future actions, would generally increase potential adverse cumulative impacts on fire and fuels management and suppression, but could decrease the number of unintended ignitions due to decreased access and development.

Alternatives D and E would increase public access, vegetation treatments, livestock grazing, and surface disturbance compared to the other alternatives. The effects of alternatives D and E, when combined with other land uses and past, present, and reasonably foreseeable future actions, would generally result in beneficial cumulative impacts on fire and fuels management and suppression, but could increase the number of unintended ignitions due to increased access and development.

3.8 Visual Resources, Dark Night Skies, and Natural Soundscapes

3.8.1 Visual Resource Affected Environment

The analysis area for visual resources is the Planning Area.

The BLM VRM system consists of three components: the visual resource inventory (VRI), the establishment of management classes and corresponding objectives through the land use planning process, and the analysis of projects to determine conformance with VRM objectives. An updated VRI for lands in the Planning Area began in 2012 and was finalized in April 2018 (Maps 27 through 30). Refer to Chapter 2, Section 2.2.12, *Visual Resources* (pages 82–88), and Appendix 1 (*Maps*), Maps 15 through 17 (pages 227–229), in the AMS (BLM 2018b) for more information on VRI components and VRM class objectives.

Although VRI classes use the same numerical scale (i.e., Class I through IV) as VRM classes, they are defined differently. VRI classes are the categories the BLM uses to classify the current visual character of a landscape and are a way to communicate the degree of scenic quality, how sensitive the public is to it changing, and how visible it is from commonly used locations like roads and viewpoints. Areas where a previous non-discretionary management decision (Act of Congress, Executive Order by the President, or Secretarial Order by the Secretary of the Interior) was made to preserve a natural landscape are managed as VRM Class I, and therefore are assigned VRI Class I in the visual resource inventory (e.g., WSAs). Management of VRI Class I lands are not subject to reconsideration under an RMP revision and would continue to be managed as a VRM Class I. For the remaining VRI classes, Class II indicates high scenic quality or moderate scenic quality in the foreground/middleground that is highly sensitive, while VRM Class IV indicates lower scenic quality or areas that are in the background or seldomly seen.

Approximately 47 percent of the lands in the Planning Area are VRI Class I, 30 percent are VRI Class II, 13 percent are VRI Class III, and 10 percent are VRI Class IV (Table 3.8-1) (BLM 2018e).

Table 3.8-1. VRI Class Acres by Administrative Unit

VRI Class	Grand Staircase Unit (acres)	Kaiparowits Unit (acres)	Escalante Canyons Unit (acres)	KEPA (acres)	Total Acres VRI Class
I	74,738	411,777	184,467	209,419	880,402
II	109,285	55,783	52,959	331,284	549,311
III	15,523	15,315	4,861	199,491	235,191
IV	10,266	67,907	0	120,240	860,435
Total	209,812	550,783	242,287	860,435	1,863,317

Source: BLM 2018e
VRI – visual resource inventory, KEPA – Kanab-Escalante Planning Area

The majority of the lands in the Planning Area exhibit the qualities of a highly intact, natural landscape, as well as rugged, relatively undisturbed visual conditions, distinct (or memorable) natural attributes, and general inaccessibility. Approximately 46 percent of the Planning Area is rated as having high (Class A) scenic quality with approximately 53 percent of the Planning Area having Class B (above average) scenic quality. One scenic quality rating unit (the Upper Escalante Canyons Unit that includes the upper reaches of the Escalante River, Calf Creek, and the lower reaches of Death Hollow) is one of the highest-scoring units across BLM-administered surface lands. The high scenic quality in the Planning Area is a result of the area's extraordinary topography, geology, abundance of canyons and waterways, varieties of vegetation, and cultural history features. Diverse vistas and canyons, rare and unusual geological formations, and colorful and highly contrasting sandstones also contribute to the Planning Area's high visual quality. These attributes have made the area an internationally recognized, world-famous scenic destination. Less than 10 percent of the Planning Area contains prominent modifications such as utility infrastructure or vegetation treatments that create disharmony with the natural, characteristic landscape. Sparse population and a large contiguous tract of BLM-administered surface lands with few private inholdings have resulted in a stable trend for maintaining scenic quality since the designation of GSENM in 1996.

Lands within the Planning Area also contain a high level of visual sensitivity (60 percent of the Planning Area), drawing an increasing number of visitors each year who come to the area to recreate and sightsee. Additionally, 48 percent of the Planning Area is located within the foreground/middleground visual distance zone area, with 49 percent of the Planning Area occurring within the seldom-seen visual distance zone (BLM 2018e). The seldom-seen areas influence the assignment of lower VRI classes in many locations within the Planning Area.

Refer to the GSENM-KEPA VRI Report for more information on VRI, scenic quality, sensitivity, and distance zones in the Planning Area (BLM 2019b).

3.8.2 Dark Night Sky Resource Affected Environment

In 2016, an inventory using satellite imagery and on-ground readings revealed that the Planning Area is one of the most naturally dark outdoor spaces left in the lower 48 United States. The night skies over 90 percent of the Planning Area qualify under the descriptive term "pristine." In such conditions, only natural sources of light, such as starlight, airglow, aurora, and zodiacal light, are visible to the human eye. According to *The New World Atlas of Artificial Night Sky Brightness* (Falchi et al. 2016), only 30.4 percent 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. Additional inventories that same year documented that fewer than 30 fixed artificial light sources exist in the Planning Area. The "pristine" night skies in the Planning Area are a rarity (BLM 2018b).

The Planning Area is surrounded by areas with designations protecting night skies at a variety of scales. Several NPS units surrounding the Planning Area also hold International Dark Sky designations, such as "Dark Sky Sanctuary" at Rainbow Bridge National Monument, and several are actively pursuing "Dark Sky Park" designations (such as Glen Canyon). Dark night skies in the Planning Area provide for astrotourism opportunities for public land users and notable economic development potential for gateway communities such as Kanab, Escalante, Boulder, and Cannonville. 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 area to the west, in the Torrey area to the northwest, and in the Page, Arizona area to the southeast (BLM 2018b). A Missouri State University study examined the economic benefits of the Colorado Plateau Dark Sky Cooperative, which covers approximately 130,000 square miles over four Southwestern states—Colorado, New Mexico, Arizona, and Utah—including the Planning Area. The study estimated that from 2014 to 2023, visitors to these areas would spend an estimated $2.5 billion for tourism-related activities including viewing dark night skies, and the total economic effect of this additional spending would create an estimated 52,257 total jobs (Mitchell and Gallaway 2015).

3.8.3 Natural Soundscapes Affected Environment

The analysis area for natural soundscapes is the Planning Area plus a 3-mile buffer. Although noise can and does extend beyond 3 miles, the 3-mile distance was chosen because it is the likely distance to which noise emanating from most surface-disturbing activities would attenuate to an acceptable level for sensitive receptors. The soundscapes of the Planning Area offer an array of natural sounds, as well as an environment relatively free of human-caused sound. Natural sounds are intrinsic to resource conditions and visitor experience. Human-caused sound (intrusive sound) can be disruptive to visitors and wildlife. Natural soundscape resources are increasingly of public concern and noted during scoping for planning efforts and review of proposed projects on BLM-administered surface lands.

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. Because of the abundant noise found in urban and suburban areas, the majority of visitors to protected natural areas come seeking respite from ambient stressors such as noise. Natural quiet is important for visitors, ecosystem health, and the welfare of non-human species who reside in protected natural areas.

Since 2014, Southern Utah University has documented the acoustic baseline using sound level meters and digital audio recorders situated in various locations across the Planning Area based on acoustic/biological/geographic zones, visitor use areas, and WSAs. The highest percentages of human-caused noise in the Planning Area are created by high-altitude jets and visitors at popular recreation sites. Several monitored sites were found to be within the range of the quietest locations monitored in the lower 48 United States, based on exceedingly low decibel

levels. Recorded decibel levels were approaching the noise floor at several monitored locations, requiring extremely sensitive acoustic equipment to accurately document the sound level. One such location was at the Dry Forks site. As a comparison, the natural quiet in the Planning Area was recorded at 5.7 A-weighted decibels (dBA) whereas two very quiet national parks, Great Sand Dunes National Park (8.7 dBA) and Haleakala National Park (10 dBA), had higher decibel readings.

3.8.4 Environmental Consequences

3.8.4.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on visual and dark night sky and soundscape resources on BLM-administered surface lands from implementation of the management alternatives. The BLM will manage the Planning Area using management specific to each program area (e.g., recreation, mineral, or livestock grazing). Impacts on visual resources are assessed by comparing the existing VRI class and the proposed VRM class of an area and examining how other resources and resource use management actions may affect visual resources with a focus on potential change in scenic quality or landscape character. Sensitivity levels within the Planning Area are predominantly moderate to high, with isolated areas of low sensitivity. If current trends are considered, an increase in overall sensitivity to change in the visual landscape is likely if management actions affect the overall landscape character. In addition, due to the complex topography and remoteness of the majority of the Planning Area, the landscape includes a mix of foreground/middleground and seldom-seen distance zones. Changes in visual distance zones could occur as a result of management actions related to additional development, thus creating more visible areas to the public where changes in landscape character are more discernable. As such, the impact analysis focuses on the potential for change in the VRI classification due to a potential change in scenic quality. Under all of the alternatives, there is no anticipated improvement associated with scenic quality.

Impacts on visual resources would primarily result from the following impact mechanism:

- Impacts on VRI inventory factors scenic quality, public sensitivity, and distance zones may result from proposed program actions that are allowed within various VRM class designations.

Impacts on night sky resources would primarily result from the following impact mechanism:

- Contributions that increase light pollution

Impacts on soundscape resources would primarily result from the following impact mechanism:

- Contributions that increase ambient noise levels or affect the enjoyment of the natural environment

For this analysis, effects on visual, dark night sky, and soundscape resources from these impact mechanisms are generally described in a qualitative fashion, with acreages provided where appropriate to draw distinctions among the alternatives.

This analysis uses the following assumptions.

Visual Resources

- VRM class objectives apply to all program areas and would be adhered to through project design, avoidance, or mitigation.
- Visual design considerations will be incorporated into all surface-disturbing projects regardless of size, potential impact, or VRM class.
- Visitors to BLM-administered surface lands, adjacent NPS lands, or residents living near BLM-administered surface lands are sensitive to changes in visual quality.
- Scenic resources would become increasingly important to residents of and visitors to the area.
- Activities that cause the most contrast and thus are the most noticeable to the casual viewer would be considered to have the greatest effect on scenic quality. The severity of a visual effect depends on a variety of factors, including the size and scale of a project, vegetation and landform manipulation, and the overall visibility of disturbed areas. The more protection that is associated with the management of other resources and special designations, the greater the benefit to visual resources of the surrounding viewsheds.
- Visual contrast ratings would be required for proposed projects that may alter the landscape character.
- Projects would be designed to meet VRM class objectives. If a project could not be designed to meet VRM objectives, it would be not be approved or a plan amendment would be necessary.

Dark Night Skies

- Visitors to BLM-administered surface lands, adjacent NPS lands, or residents living near BLM-administered surface lands appreciate and value night skies that are unimpaired by light pollution.
- Management of dark night skies requires collaboration with Federal, State, county, tribal, and local agencies and provides an opportunity for communication, coordination, and project planning with partner agencies.
- The quality of dark night skies is dependent on the weather, the clarity of the air, and the amount of light pollution present.
- An increase in management associated with the emittance of artificial light activities (e.g., transportation networks, mining and recreation facilities) would increase the level of light pollution in the Planning Area.

Natural Soundscapes

- Visitors to BLM-administered surface lands, adjacent NPS lands, or residents living near BLM-administered surface lands appreciate and value undisturbed natural soundscapes.
- Future development of a soundscape management plan will identify noise-monitoring metrics and procedures as well as management objectives to evaluate the level of impact associated with proposed future actions.
- Soundscape management activities require collaboration with Federal, State, county, tribal, and local agencies, and a soundscape management plan provides a basis for communication, coordination, and project planning with partner agencies.

- An increase in management activities associated with surface-disturbing activities (e.g., mineral extraction in KEPA) as well as increased OHV use resulting from increased transportation routes would increase the level of ambient noise in the Planning Area.

3.8.4.2 Direct and Indirect Effects

Impacts on visual resources are assessed by analyzing the impact of proposed actions on the existing visual resource conditions, expressed through the VRI classification of an area. In addition, the allowable level of change to the visual landscape is assessed by comparing the existing visual resource conditions, expressed through the VRI classification of an area, to the proposed VRM classification of the same area. The VRM class objectives provide criteria for determining the level of disturbance that an area can support while still meeting visual resource objectives.

Impacts from Proposed VRM Classes

Applying VRM Class I and II objectives to any VRI classification would preserve or retain the existing character of the landscape. In other words, the inventoried scenic values would be expected to remain the same. At a landscape level, the more VRI Class II areas that are managed as VRM Class II, the more protection would be afforded to areas with generally high scenic quality. Conversely, lands classified as VRI Class II would see a greater potential for direct and indirect adverse impacts from areas designated as VRM Class III or IV than lands classified as VRI Class III or IV because the significance of the impact or the change in landscape character could be much greater in a VRI Class II area versus a VRI Class IV area. Because lands classified as VRI Class I are considered special areas (e.g., WSAs), these lands are always designated VRM Class I to prevent long-term visual impacts.

The results of the VRI completed in 2018 are presented above in Table 3.8-1. Table 3.8-2 and Table 3.8-3 identify how VRM class designations would be applied to the three GSENM units and KEPA with VRI classes for each alternative. The differences in visual resource impacts between the alternatives from the proposed VRM designations as well as from resource management actions are discussed below.

Table 3.8-2. Summary of VRI Class by Proposed VRM Class – Grand Staircase, Kaiparowits, and Escalante Canyons Units

VRM Class	VRM Acres	VRI Class I Acres	VRI Class II Acres	VRI Class III Acres	VRI Class IV Acres
Alternative A					
VRM Class I	0	0[1]	0	0	0
VRM Class II	751,240	510,538	187,698	30,910	22,095
VRM Class III	251,642	160,445	30,329	4,789	56,078
VRM Class IV	0	0	0	0	0
Alternative B					
VRM Class I	851,413	671,435	102,426	15,555	61,910
VRM Class II	120,295	0	115,851	3,362	1,035
VRM Class III	32,040	0	0	16,813	15,228
VRM Class IV	0	0	0	0	0

VRM Class	VRM Acres	VRI Class I Acres	VRI Class II Acres	VRI Class III Acres	VRI Class IV Acres
Alternative C					
VRM Class I	671,435	671,435	0	0	0
VRM Class II	671,452	0	218,276	8,954	10,319
VRM Class III	26,776	0	0	26,776	0
VRM Class IV	67,854	0	0	0	67,854
Alternative D (Preferred Alternative)					
VRM Class I	671,452	671,452	0	0	0
VRM Class II	217,149	0	217,110	39	0
VRM Class III	36,857	0	1,167	35,691	0
VRM Class IV	78,173	0	0	0	78,173
Alternative E (Proposed Plans)					
VRM Class I	671,452	671,452	0	0	0
VRM Class II	217,110	0	217,110	0	0
VRM Class III	36,896	0	1,167	35,691	0
VRM Class IV	78,173	0	0	0	78,173

Source: BLM 2018e
[1] The 2018 VRI followed BLM policies including the 2012 BLM Manual 6330, which indicates that WSAs will be managed according to VRM Class I management objectives. As such, WSAs in the Planning Area were assigned a VRI Class I. However, in Alternative A (No Action Alternative), VRM allocations for WSAs differ from the VRI class because Alternative A reflects the 2000 GSENM MMP decisions, which were made prior to the policy provided in the 2012 BLM Manual 6330. Consistent with policy, all action alternatives apply VRM Class I to WSAs.
VRI – visual resource inventory, VRM – Visual Resource Management, BLM – Bureau of Land Management, WSA – Wilderness Study Area, GSENM – Grand Staircase-Escalante National Monument, MMP – Monument Management Plan

Table 3.8-3. Summary of VRI Class by Proposed VRM Class – KEPA

VRM Class	VRM Acres	VRI Class I[1] Acres	VRI Class II Acres	VRI Class III Acres	VRI Class IV Acres
Alternative A					
VRM Class I[1]	0	0	0	0	0
VRM Class II	520,620	152,615	225,141	115,748	27,116
VRM Class III	339,815	56,804	106,143	83,743	93,124
VRM Class IV	0	0	0	0	0
Alternative B					
VRM Class I	589,074	209,707	218,737	109,138	51,425
VRM Class II	197,159	0	113,350	53,046	30,726
VRM Class III	49,309	0	0	37,860	0
VRM Class IV	38,232	0	0	0	38,252
Alternative C					
VRM Class I	209,707	209,707	0	0	0
VRM Class II	209,707	0	328,604	72,053	18,388

VRM Class	VRM Acres	VRI Class I[1] Acres	VRI Class II Acres	VRI Class III Acres	VRI Class IV Acres
VRM Class III	131,474	0	3,484	127,990	0
VRM Class IV	101,995	0	0	0	101,995
Alternative D (Preferred Alternative)					
VRM Class I	209,707	209,707	0	0	0
VRM Class II	207,011	0	206,633	377	0
VRM Class III	308,320	0	123,549	184,771	0
VRM Class IV	137,207	0	1,905	14,896	120,383
Alternative E (Proposed Plan)					
VRM Class I	209,707	209,707	0	0	0
VRM Class II	205,347	0	205,347	0	73
VRM Class III	310,031	0	124,883	185,148	0
VRM Class IV	137,159	0	1,857	14,896	120,383

Source: BLM 2018e

[1] The 2018 VRI followed BLM policies including the 2012 BLM Manual 6330, which indicates that WSAs will be managed according to VRM Class I management objectives. As such, WSAs in the Planning Area were assigned a VRI Class I. However, in Alternative A (No Action Alternative), VRM allocations for WSAs differ from the VRI class because Alternative A reflects the 2000 GSENM MMP decisions, which were made prior to the policy provided in the 2012 BLM Manual 6330. Consistent with policy, all action alternatives apply VRM Class I to WSAs.

BLM – Bureau of Land Management, GSENM – Grand Staircase-Escalante National Monument, KEPA – Kanab-Escalante Planning Area, VRI – visual resource inventory, VRM – Visual Resource Management, WSA – Wilderness Study Area, MMP – Monument Management Plan

VRM is considered protective of existing visual resources when it assigns VRM Class I and II objectives to inventoried Class II, III, or IV lands. As indicated in Table 3.8-2 and Table 3.8-3, in the Grand Staircase, Kaiparowits, and Escalante Canyons Units, Alternative B is the most protective of visual resources, followed by alternatives A and C, respectively. Alternatives D and E are the least protective of visual resources because they contain the greatest acreages of VRM Class III and IV areas. In KEPA, Alternative B is the most protective of visual resources, followed by alternatives A and C, respectively. Alternatives D and E are the least protective of visual resources in GSENM because they contain the greatest acreages of VRM Class III and IV areas.

Impacts from Management of Other Resources and Uses

Management for vegetation, forestry and woodland products, lands and realty, livestock grazing, range improvements, mineral development in KEPA, recreation, and renewable energy development in KEPA would result in direct and indirect adverse impacts on visual resources. Impacts would occur from changes in vegetation, potential increases in surface-disturbing activities or development, and allowance of large-scale infrastructure development, which could affect the inventory factors scenic quality, sensitivity, and distance zone ratings and may potentially alter VRI Classes II and III. In comparison, special designations, such as WSAs that limit surface disturbance, would help retain their VRI Class I rating by instituting constraints on resource uses that would cause long-term direct and indirect, adverse impacts.

Long-term direct and indirect adverse impacts on inventoried visual values (scenic quality, sensitivity, and visual distance zones) would result from the development of permanent

features such as utilities infrastructure, minerals facilities, renewable energy facilities in KEPA, surface coal mining operations and mineral exploration and development in KEPA, roads, recreation sites, and range improvements. Short- and long-term, indirect, adverse impacts that could result from resource uses and activities including route proliferation associated with cross-country OHV travel or the development of roads and oil and gas infrastructure, surface mineral extraction, prescribed fire, commercial timber harvests, and structural and nonstructural range improvements.

Projects designed or implemented to meet VRM Class II objectives would reduce the potential for adverse impacts. In comparison, projects in VRM Class IV areas that generally create substantial contrasts (e.g., coal mines, solar facilities, wind farms, or high-voltage transmission lines), even when they implement BMPs, would cause adverse impacts on visual resources due to limited opportunities for reducing contrast associated with large-scale projects. The potential for impacts on inventoried visual values is driven by the range of restrictions to mineral development, ROWs, renewable energy permits, structural and nonstructural range improvements, recreation facilities, and open OHV areas, as well as the extent and management of special designations in KEPA.

Alternatives D and E would increase the potential for direct and indirect adverse impacts from changes to inventoried visual values the most, followed by alternatives C, A, and B, respectively. Alternatives D and E contain the fewest special designations and restrictions on resource uses and activities in KEPA, followed by alternatives C, A, and B, respectively. Alternative B includes the largest acreage of VRM Class I and II and special designations, as well as the most extensive restrictions on resource uses and activities in KEPA. This combination would reduce potential adverse impacts on visual resources compared to alternatives C, D, and E. In general, impacts from changes to VRI class across the three GSENM units would be similar based on the similar restrictive management in the three units under all alternatives.

Application of visual resource BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect adverse impacts on inventoried visual values. For example, the visual resource contrast rating system would be used to analyze potential visual impacts of proposed actions and identify design features to reduce impacts. Projects would be designed to avoid and mitigate impacts and meet the assigned VRM class.

Impacts on Monument Objects

Visual resources described as “striking scenery” or “scenic” in association with geologic features are identified as monument objects within the Grand Staircase, Kaiparowits, and Escalante Canyons Units (see Appendix E, *Grand Staircase-Escalante National Monument Objects and Resource Values*).

The direct and indirect visual resource impacts and the differences in these impacts across alternatives described above would also generally apply to visual resource monument objects when monument objects could be affected by the management and associated impacts in GSENM. Similarly, the beneficial impacts and protective measures described above in the direct and indirect analysis of impacts on visual resources would support the proper care and management of monument objects.

All alternatives manage the large majority of the GSENM units as VRM Class I and II and all alternatives would ensure the proper care and management of monument object scenic values.

Alternative B, then Alternative A, could increase the potential for protection of the scenic values compared to the other alternatives through restrictions on resource uses and activities and fewer acres of VRM Class III and IV.

All alternatives generally limit the extent of surface disturbance in GSENM (e.g., withdrawn from mineral entry, exclusion for utility-scale renewable energy), and thus all alternatives are anticipated to support the proper care and management of visual resource monument objects by limiting new development and disturbance in GSENM. Additionally, all action alternatives require application of appropriate BMPs for the protection of visual resources as identified in Appendix G, *Best Management Practices* (e.g., special design and reclamation measures to protect scenic and natural landscape values, and avoiding surface-disturbing activities or reducing their visual effects in sensitive visual resource areas), which would provide for the proper care and management of visual resource monument objects. Monitoring strategies for visual resources described in Appendix I, *Monitoring Strategy*, would ensure the proper care and management of monument objects (e.g., conducting a visual contrast ratings analysis for all surface-disturbing projects in VRM Class I and II areas, Class III areas with high sensitivity, and Class IV areas where inventoried values could potentially change).

Contributions that Increase Dark Night Sky Pollution

The potential for impacts on dark night skies is driven by the degree of use restrictions on mineral development in KEPA, the availability of areas for issuance of new ROW and renewable energy permits in KEPA, creation of facilities and infrastructure for OHV use and recreation (all of which can increase light pollution), and the extent and management of special designations (which may limit future development and associated light pollution).

Alternatives D and E contain the fewest special designations and restrictions on resource uses that could increase light pollution in KEPA, followed by alternatives C, A, and B, respectively. However, given the relatively limited outlook for mineral development identified in the RFD (BLM 2018b), contributions of these impacts from the alternatives would likely be minimal. In general, impacts that would increase dark night sky pollution across the three GSENM units would be similar based on the similar management in the three units.

Application of lighting and dark night sky BMPs identified in Appendix G, *Best Management Practices*, and other appropriate BMPs applied during site-specific permitting would generally reduce the potential for direct and indirect adverse impacts on dark night skies.

Impacts on Natural Soundscapes

The potential for impacts on natural soundscapes is driven by the degree to which the BLM authorizes activities that would result in an increase of intrusive sounds, including certain surface-disturbing activities (e.g., mineral development in KEPA), and surface uses (e.g., OHV use). Alternatives D and E contain the largest areas available for OHV use and the fewest restrictions on resource uses in KEPA, resulting in the greatest potential for new intrusive sounds, followed by alternatives C, A, and B. Alternatives B and A, respectively, include a greater acreage of protective restrictions due to the management of other resources and special designations in KEPA, and would support preservation of natural soundscapes to a greater extent than alternatives C, D, and E. In general, the potential for adverse impacts on natural soundscapes across the three GSENM units would be similar based on the similar management within the three units.

Application of noise reduction and natural soundscape BMPs identified in Appendix G, *Best Management Practices*, and other appropriate BMPs applied during site-specific permitting would generally reduce the potential for direct and indirect adverse impacts on natural soundscapes.

Impacts on Scenery, Night Skies, and Natural Soundscape from Proactive Management

All action alternatives include development of interpretive materials and programs to educate and engage the public about night sky, scenic, and natural soundscape resources in the Planning Area. Interpretive materials and programs related to night skies, scenery, and natural soundscapes would increase public understanding and appreciation for these unique resources in the Planning Area. Interpretive materials would likely include brochures, maps, and other handout materials, but could also include interpretive signs. Interpretive signs may be located in areas of particularly unique scenery, night skies, or soundscapes. These signs would generally be small and are not anticipated to result in impacts on other resources or resource uses.

All action alternatives include a decision to inventory and monitor night skies and natural soundscapes in partnership with local communities, universities, and other stakeholders. Inventory and monitoring of night skies and natural soundscapes could provide information to inform appropriate analysis and mitigation during activity and implementation-level decisionmaking, which could reduce potential impacts on night skies and natural soundscapes. In general, inventory and monitoring may include placement of monitors and other short-term activity that is not anticipated to result in impacts on other resources and resource uses.

3.8.4.3 Cumulative Effects

Visual Resources

The cumulative impacts analysis area for visual resources and dark night sky resources is the viewshed within a 15-mile distance of the Planning Area. Although views can and do extend beyond 15 miles, the 15-mile distance was chosen because it defines the background distance zone (BLM Handbook H-8410-1) and is near the limit of visibility of skylined energy development facilities, such as transmission towers and wind turbines, that may be readily noticeable to casual observers. Beyond that distance, development in the Planning Area would have negligible, if any, contributions to cumulative visual resource impacts.

Past, present, and reasonably foreseeable future actions and conditions (Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*) in the cumulative impacts analysis area that have and would likely continue to adversely affect visual resources are residential, commercial, and industrial developments; mineral developments; vegetation treatments; cross-country OHV travel; range improvements; recreational developments; ROWs; and road construction due to overall changes in landscape character and level of contrast. Utility-scale renewable energy development and other long-term and large-scale facilities could have widespread and long-term, adverse effects on visual resources due to the relative scale and level of contrast that these projects would create against the existing environment. Buried pipelines such as the Lake Powell pipeline and various other buried pipeline projects would result in surface disturbance and linear scarring that would contribute to cumulative impacts until the disturbed area is fully reclaimed.

Management of resource development and VRM on BLM-administered surface land may also be incompatible with VRM on adjacent lands. Alternatives D and E manage KEPA land adjacent to Glen Canyon NRA and within the viewsheds of Capitol Reef and Bryce Canyon National Parks primarily as VRM Class III (Maps 24 through 26), which could result in adverse impacts. Alternatives D and E place fewer restrictions on minerals, ROWs, and other development activities and manage large portions of KEPA as VRM Class III in the Circle Cliffs area (northeastern portion of the Planning Area), in the area north of Big Water (south-central portion of the Planning Area), and in the western boundary of the Planning Area. Managing these areas as VRM Class III, and the potential for development in these areas (e.g., mineral development in KEPA), could result in new, adverse visual contrast that could adversely affect viewers and viewsheds from NPS lands. In general, potential impacts on viewsheds in lands adjacent to the Planning Area would be greatest for lands that are higher in elevation than the Planning Area, such as Bryce Canyon National Park, which provide unobstructed views of KEPA lands where development may occur.

Dark Night Skies

Past, present, and reasonably foreseeable future actions and conditions in the cumulative impacts analysis area that have the potential to adversely affect night skies include artificial lighting associated with residential, commercial, and industrial developments; mineral developments (e.g., Alton Coal Tract); recreational developments; ROWs; and renewable energy development. Increased development of cities and towns around the Planning Area has resulted in, and is expected to continue to result in, the incremental expansion of residential and commercial development closer to BLM-administered surface lands. Continued growth and development of lands adjacent to BLM-administered surface lands could also increase demand for energy resources, building materials, utilities, and minerals, all of which could spur development that would adversely affect night skies by increasing the amount of artificial light associated with this type of development. These adverse impacts could be partially be countered by the adoption of night sky protection ordinances and/or International Dark Sky Designations that several of the local communities and Federal land management agencies have or are seeking.

Similar to visual resource impacts, BLM management in the Planning Area and the potential for development in certain portions of the Planning Area could increase light sources and associated light pollution that degrade dark night skies for viewers in adjacent lands. Alternatives C, D, and E would generally increase development potential in KEPA that could degrade night skies for viewers within and adjacent to the Planning Area. Alternative B, which includes additional constraints on development and a greater acreage of VRM Class I and II areas, could reduce potential impacts on night skies compared to the other action alternatives.

Natural Soundscapes

Past, present, and reasonably foreseeable future actions and conditions in the cumulative impacts analysis areas that have and would likely continue to adversely affect natural soundscapes are associated with intrusive sounds such as airplanes, recreational visitors, recreational activities such as OHV riding and target shooting, vehicle travel, mineral development (e.g., Alton Coal Tract), ROW development, community development and expansion, and road construction. Energy development, which depends on a variety of external

factors such as type, location, scale, and operational processes, could have widespread and long-term, adverse effects on natural soundscape resources.

Similar to visual resource and night sky impacts, BLM management in the Planning Area and the potential for development in certain portions of the Planning Area could increase development potential and human activity that affects the natural soundscape both within and adjacent to the Planning Area. Alternatives C, D, and E would generally increase development potential and human activity in KEPA that could introduce new noise sources to the natural soundscape. Alternative B, which includes additional constraints on development, could reduce the potential for new noise sources that would affect the natural soundscape, compared to the other alternatives.

3.9 Wild Horses

3.9.1 Affected Environment

The analysis for wild horses is the Planning Area and herd areas (HAs) that intersect it (Map 32).

The BLM is responsible for the protection, management, and control of wild horses and burros under the Wild Free-Roaming Horses and Burros Act of 1971, as amended through the designation of Herd Management Areas for the long-term maintenance of wild horse and burro herds. The Planning Area does not contain or overlap any Herd Management Areas; however, it does overlap two HAs. An HA is an area of public land that was used by wild horses and burros at the time the Wild Free-Roaming Horses and Burros Act was passed (December 1971). Although not managed for wild horses and burros, some horses and burros still occupy HAs.

The Moody-Wagon Box Mesa HA is located in the northeastern portion of the Planning Area. The Harvey's Fear HA is located in the southeastern portion of the Planning Area southwest of Fiftymile Mountain. Table 3.9-1 depicts acreage of HAs in the Planning Area. Because neither of the HAs are herd management areas, the BLM has not set appropriate management levels for these areas. There are no wild horses in the Moody-Wagon Box Mesa HA. The Harvey's Fear HA area is generally isolated, which prevents the herd from exposure to other horses and reduces genetic variability in the herds.

Table 3.9-1. Acreage of Herd Areas in the Planning Area

Herd Area	GSENM Grand Staircase Unit	GSENM Escalante Canyons Unit	GSENM Kaiparowits Unit	KEPA
Harvey's Fear	0	0	2,999	2,645
Moody-Wagon Box Mesa	0	7,977	0	45,628
Total	0	**7,977**	**2,999**	**48,273**

Source: BLM 2018f
GSENM – Grand Staircase-Escalante National Monument, KEPA – Kanab-Escalante Planning Area

3.9.2 Environmental Consequences

3.9.2.1 Methods and Assumptions

In general, there are no expected direct, indirect, or cumulative impacts on wild horses. Potential impacts on wild horses are limited based on the following factors:

- The remote location of Harvey's Fear HA within a WSA limits exposure to and potential effects from human activities.
- The small population of Harvey's Fear HA is limited primarily by predation, natural death, and available resources. The Moody-Wagon Box Mesa HA does not currently support any wild horses.
- The BLM does not currently manage wild horse populations in the HAs.

This analysis uses the following assumptions:

- The non-impairment requirement as established in BLM Manual 6330, Management of Wilderness Study Areas, would be enforced.
- The remote location of Harvey's Fear HA has resulted in the herd having no contact with other horses and becoming genetically unviable.
- The BLM has no future plans to manage the HAs as herd management areas.

3.9.2.2 Direct and Indirect Effects

In general, there are no expected direct or indirect impacts on wild horses or the HAs that intersect the Planning Area. The Moody-Wagon Box Mesa HA does not currently support any wild horses; therefore, there would be no impacts. Because Harvey's Fear HA is located within a WSA and is extremely remote, management decisions would generally not affect wild horses in this HA.

To adequately manage wild horse populations, all of the action alternatives include management to conduct population surveys of wild horses within Planning Area HAs every 3 to 4 years. These surveys would provide useful data and updated estimates of wild horse populations that would help inform future BLM decisions for herd management in the Planning Area, including objectives to manage wild horse populations toward natural ecological balance, if needed. Population surveys of wild horses are not anticipated to result in impacts on other resources and resource uses. All alternatives would also allow the BLM to remove wild horses from the HAs if the need arises.

3.9.2.3 Cumulative Effects

The cumulative impacts analysis area for wild horses is the full extent of the Harvey's Fear HA and Moody-Wagon Box Mesa HA that intersect the Planning Area. Because there are no anticipated direct or indirect effects on wild horses, management decisions would not contribute to cumulative effects.

3.10 Forestry and Woodland Products

3.10.1 Affected Environment

The analysis area for forestry and woodland products is the Planning Area (Map 33). Pinyon-juniper woodlands have expanded into vegetation types that were historically mostly tree free;

as a result, these woodland stands are the target of forestry management and fuelwood harvesting. As discussed in Section 3.7, *Vegetation and Fire and Fuels Management*, many of the Planning Area's forested stands are in poor condition and are at risk of loss, indicating a need for restoration work to sustain the stands in a healthy condition.

The greatest demand on woodland resources is for fuelwood harvesting (i.e., individuals cutting firewood for personal use). Currently, pinyon pine and juniper are the preferred species for fuelwood. Fuelwood harvesting, post cutting, and Christmas tree cutting are allowed by permit only in the Buckskin Mountain (19,437 acres) and Rock Springs Bench (4,553 acres) fuelwood designated areas of KEPA (Map 33), which provide a total of 23,990 acres of land available for forest and woodland product harvest in the Planning Area. In 2017, 390 cords of fuelwood, 38 cedar posts, and 8 Christmas trees were harvested from these designated areas. Refer to Chapter 2, Section 2.3.1, *Forestry and Woodland Products* (pages 95–98), Table 23 (page 95), in the AMS (BLM 2018b) for more information on woodland product harvests between 2015 and 2018.

There are no designated fuelwood areas located in the Grand Staircase, Kaiparowits, and Escalante Canyons Units of GSENM; however, since 2005, GSENM has taken part in a national BLM "stewardship" program, under which the agency actively promotes utilization of biomass and the creation of a biomass industry. GSENM awarded 14 stewardship contracts for land treatments on approximately 1,757 acres with a biomass volume of approximately 4,800 tons between 2005 and 2013. Stewardship program projects address a variety of land management objectives including, but not limited to, forest health, wildlife habitat improvement, wildland fuels reduction, livestock grazing, public recreation, and VRM.

In the Buckskin Mountain Fuelwood Area, GSENM and the BLM partnered with UDWR and the Utah Watershed Restoration Initiative to treat (i.e., hand thin with chainsaws) approximately 6,268 acres of pinyon-juniper trees with a biomass volume of approximately 13,000 tons between 2008 and 2013. No acres have been treated within the Rock Springs Bench designated fuelwood area. Refer to Chapter 2, Section 2.3.1, *Forestry and Woodland Products* (pages 95–98), Tables 24 and 25 (pages 96 and 97), in the AMS (BLM 2018b) for more information about the stewardship program, stewardship contracts, and the Buckskin Mountain Fuelwood Area hand-thin projects.

The BLM forecasts that the demand for harvest, forest, and woodland resources will continue and likely increase slightly in the future. In particular, interest in biomass generated from stewardship contracts has been growing; however, demand depends primarily on the future of the biomass and bio-energy industries. It is unlikely that commercial timber harvest would ever be considered as a future management tool because the predominant vegetation (sagebrush, pinyon-juniper) does not contain any sawmill-quality lumber that would support a viable logging industry.

3.10.2 Environmental Consequences

3.10.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on forestry and woodland products from implementation of the management alternatives. The BLM will manage the Planning Area using management specific to each program area (e.g., fish and wildlife, soils, water). When assessing effects on forestry and woodland products, it is important to note that

impacts will generally be limited because there are few opportunities and suitable locations for forestry and woodland product harvesting in the Planning Area. Impacts on forestry and woodland products would primarily result from the following impact mechanisms:

- Restrictions to harvesting in specific areas
- The level of proactive management to improve forest health
- Wildland fire effects

Effects on forestry and woodland resource uses from these impact mechanisms are generally described in a qualitative fashion, with acreages provided where appropriate to draw distinctions among the alternatives.

This analysis uses the following assumptions:

- Several traditional woodland products (e.g., Christmas trees, posts and poles, fuelwood) may be harvested from tree species growing on sites not classified as forest or woodland.
- Demand for forest and woodland products is not anticipated to grow substantially over the planning period; however, biomass utilization and stewardship contracts may increase in the future.
- Forest product removal is a permitted multiple use; the analysis below incorporates the BMPs for forestry and woodland products included in Appendix G, *Best Management Practices*.
- Management actions for the following program areas are not addressed in detail in this comparative analysis because they would result in limited direct and indirect impacts on forestry and woodland products, or in direct and indirect impacts that would not vary substantially by alternative: cultural resources, paleontological and geological resources, recreation, livestock grazing, transportation, visual resources, wild horses, lands and realty and renewable energy, and minerals.

3.10.2.2 Direct and Indirect Effects

Direct adverse impacts on forest and woodland products result from other resource or resource use programs that limit or restrict the use of forest products. These adverse impacts occur from allowable use decisions that restrict surface-disturbing activities. Direct adverse impacts also occur when management decisions prioritize other resource values, such as special status plant species and lands with wilderness characteristics, over forest and woodland product use. Indirect beneficial impacts result when management decisions emphasize the use of forest products to maintain forest ecosystem health and when vegetation treatments are designed to improve forest and woodland objectives.

The use of prescribed fire to protect, maintain, and enhance vegetation resources would decrease the availability of forest and woodland products in the short term; however, it would result in long-term indirect benefits to forest and woodland health and future availability for the use of these products. Suppressing wildland fires in areas where fire is not desired could increase the quantity of forest and woodland products. Fire suppression typically results in denser forest stands, increasing the potential for these areas to be managed with biomass stewardship programs to address forest health objectives. Alternatively, treatments on encroached pinyon-juniper stands could result in long-term beneficial impacts on fire and fuels management, land health, soils, and habitat for sagebrush/grassland steppe-dependent species. Fire and fuels management objectives would be the same across all alternatives,

although the application of fire and fuels management activities would vary, as they would be governed by other resource decisions.

Impacts from Limits or Restrictions on Forest and Woodland Harvest

Long-term direct adverse impacts on forestry and woodland products could result in areas where fuelwood cutting or the distribution of commercial wood-cutting permits is specifically prohibited, such as special status plant species habitat and some lands with wilderness characteristics. Long-term, indirect, adverse impacts could also result from surface disturbance restrictions intended to protect special status wildlife and fish species and sensitive big game habitat; riparian and wetland areas; fragile or sensitive soil areas; Drinking Water Source Protection Zones; and in the OSNHT National Trail Management Corridor (NTMC). These management decisions would reduce the lands available for forest and woodland harvesting activities.

In general, alternatives that include more management restrictions and protections for resources (e.g., vegetation, visual resources) could reduce areas available for forest harvesting activities, resulting in adverse impacts on harvesting opportunities. Alternatives D and E would generally have fewer management restrictions for resources and fewer resulting impacts on forest and woodland harvest activities, compared to the other alternatives. The potential for adverse direct impacts from prohibitions on forest harvesting activities, including commercial harvesting, would be the greatest under Alternative A, followed by Alternative B, and smallest under alternatives C, D, and E, respectively. Under Alternative A, no commercial timber harvest is allowed, and harvesting activities (i.e., fuelwood harvest, post cutting, and Christmas tree cutting) are only allowed in the designated Rock Springs and Buckskin Mountain areas. Alternative B applies fewer restrictions than Alternative A by allowing commercial and non-commercial timber harvesting in KEPA for the purposes of promoting or sustaining forest health while still prohibiting these activities within the GSENM units. Under alternatives C and D, commercial timber harvesting would be allowed in both KEPA and GSENM for the purposes of promoting or sustaining forest health. Alternative E would apply the fewest restrictions among the alternatives by allowing both commercial and non-commercial timber harvesting for the purposes of promoting or sustaining forest health across the entirety of the GSENM units and within KEPA. Additionally, commercial and non-commercial fuelwood harvesting, post cutting, and Christmas tree cutting would be allowed across the entirety of the Planning Area under alternatives C, D, and E, with the exception of within WSAs and areas designated as closed to harvesting. As a result, alternatives C, D, and E would be least restrictive, resulting in the lowest potential for adverse impacts on forest and woodland product harvesting.

Alternatives A and B include the most limitations on surface-disturbing activities for the protection of other resources and special designations; these restrictions could adversely affect forestry and woodland harvesting activities because they limit certain harvest methods. Under Alternative B, surface-disturbing activities are prohibited within crucial desert bighorn sheep habitat during lambing season, within 0.25 mile of southwestern willow flycatcher and western yellow-billed cuckoo suitable habitat, in fragile or sensitive soil areas, within Drinking Water Source Protection Zones, and within the OSNHT NTMC, limiting the areas where surface-disturbing activities associated with harvesting forest and woodland products could occur. Alternative B also prohibits fuelwood cutting in all special status plant species habitat. Alternatives C, D, and E include comparatively fewer resource use and development restrictions, particularly in KEPA, and allow fuelwood cutting in habitat for BLM sensitive plant

species across the Planning Area, pending approval by the BLM that habitat degradation would not occur as a result. Alternatives D and E would also allow surface-disturbing activities in crucial desert bighorn sheep habitat (subject to BMPs and mitigation), whereas Alternative B would prohibit surface-disturbing activities in crucial desert bighorn sheep habitat and Alternative C would prohibit surface-disturbing activities in crucial desert bighorn sheep habitat during lambing season. As a result, impacts from restricting harvesting activities would be fewest in KEPA under alternatives E, D, C, and then B, respectively.

Impacts from Vegetation and Forest Management

Vegetation restoration treatments could have short-term direct adverse impacts on forests and woodlands through surface-disturbing activities and removal of vegetation. However, as these areas are reclaimed, long-term beneficial impacts on forests and woodlands could include the restoration of overall stand health, composition, diversity, and resiliency. For example, fuel reduction treatments and prescribed burning could result in short-term disturbances to forest and woodland communities, but could have long-term beneficial impacts on species composition and diversity.

Short-term adverse impacts would be greatest under alternatives D and E, which allow the full range of upland vegetation treatment methods. However, alternatives D and E would prioritize treatments in areas where removal of woodland products would improve rangeland health, wildlife habitat, and forage. Alternative C would result in similar impacts as alternatives D and E, as it would allow all vegetation treatment methods except chaining; however, treatments would be designed to promote overall land health, potentially resulting in additional long-term benefits to forestry and woodland products compared to alternatives D and E. Alternative A allows the use of machinery unless limited by management for other resources and allocations and generally applies greater restrictions on treatments that could benefit woodland stands and the production of woodland products compared to alternatives C, D, and E. Alternative B allows vegetation treatments only in limited circumstances, which could result in the least potential for short-term adverse impacts and the fewest long-term beneficial impacts, compared to the other alternatives.

3.10.2.3 Cumulative Effects

The cumulative impacts analysis area for forestry and woodland products is the Planning Area and watersheds that intersect the Planning Area. The analysis area encompasses the extent of forested areas and communities that could be cumulatively affected by harvesting, fires, vegetation treatments, and other activities associated with management decisions. Vegetation restoration treatments focused on forests undertaken by other agencies and landowners would reduce the risk of wildland fire and long-term loss of forest products and productivity within the Planning Area, which would improve forest ecosystem health and function by maintaining or enhancing ecological complexity in forested stands, resulting in long-term benefits to forest products. Past, present, and reasonably foreseeable vegetation projects include Upper Paria Watershed vegetation treatments; Skutumpah vegetation treatments; Alvey Wash, Coal Bench, and Last Chance vegetation restoration projects; and other vegetation treatment and weed management plans and projects identified in Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions.*

Conversely, the availability of other forest and woodland products on adjacent lands could reduce the demand for these products within the Planning Area, which would result in adverse

impacts on forestry and woodland products. Among the alternatives, alternatives D and E would have the greatest likelihood of reducing potential adverse cumulative impacts on forestry and woodland products, while Alternative B would have the greatest likelihood of increasing these potential cumulative impacts.

3.11 Lands and Realty and Renewable Energy

3.11.1 Lands and Realty Affected Environment

The analysis area for lands and realty is the Planning Area. The analysis area encompasses the extent of area where the BLM would make land use authorizations and land tenure adjustments associated with these RMPs.

There are two designated utility corridors in the Planning Area, both located in KEPA (Map 34). The first, designated by Public Law 105-355, runs along Highway 89 in Kane County. This utility corridor hosts the highway itself, a buried fiber optic line, and several above-ground powerlines, and will be the location of the Lake Powell Pipeline, if approved. The second is Energy Corridor #68-116, designated under Section 368 of the Energy Policy Act of 2005. This segment is part of the regional West-Wide Energy Corridor project and hosts a segment of the Navajo-McCullough powerline. There are plans to connect this line to the Glen Canyon Dam Hydro Electric Power Plant in the future. Additionally, there are several de-facto utility corridors along transportation routes in both the GSENM units and KEPA. These de-facto corridors host local power transmission lines connected to the Glen Canyon Dam Hydro Electric Power Plant. Refer to Chapter 2, Section 2.3.2, *Lands and Realty* (pages 98–102), in the AMS (BLM 2018b) for more information on utility corridors in the Planning Area. Refer to the final corridor abstract for Corridor #68-116 associated with the Section 368 Energy Corridor Regional Reviews (BLM 2018h) for the most recent conflict analysis and other information associated with this designated utility corridor.

There are two multiple-use communication sites in the Planning Area, in addition to a standalone site leased by Glen Canyon NRA in Kane County. These include Buckskin Ridge, located in KEPA in Kane County, and 50 Mile Head of Rocks, located in the Escalante Canyons Unit of GSENM (Map 34). The BLM's policy is to co-locate new facilities within these existing communication sites whenever possible.

The Planning Area currently has approximately 150 active ROWs and other land use authorizations for access roads, powerlines, pipelines, communication sites, fiber optic lines, and material sites. Many of these authorizations predate the 1996 GSENM designation and continue under valid existing rights. There are approximately six pending ROW applications or renewals that fall in KEPA. The BLM projects approximately 10 to 12 new ROW applications each year, an increasing number of which are expected to be for commercial film permits (BLM 2018b). Refer to Chapter 2, Section 2.3.2, *Lands and Realty* (pages 98–102), and Appendix 8, *Lands and Realty* (pages 327–346), in the AMS (BLM 2018b) for more information on ROW applications and a list of active land use authorizations in the GSENM units and KEPA.

GSENM unit lands are not available for disposal as a result of the national monument designation, which states, "All Federal lands and interests in lands within the boundaries of this monument are hereby appropriated and withdrawn from entry, location, selection, sale, leasing, or other disposition under the public laws, other than by exchange that furthers the protective purposes of the monument" (BLM 2018b). As part of the Utah Schools and Land Exchange Act

of 1998, BLM acquired the Utah SITLA parcels in the Planning Area. The agency has also acquired some inholding parcels in GSENM from willing sellers in order to consolidate land ownership patterns.

3.11.2 Renewable Energy Affected Environment

Renewable energy development projects in the Planning Area are permitted in accordance with the *Final Programmatic EIS (PEIS) on Wind Energy Development on BLM-Administered Lands in the Western United States* (BLM 2005a) and the *Final PEIS for Solar Energy Development in Six Southwestern States* (BLM 2012d). Renewable energy development is currently restricted across much of the Planning Area due to GSENM status (i.e., excluded in GSENM), special designations, VRM objectives, critical habitat, and technical feasibility (e.g., slopes, access). A solar energy project near Big Water, Utah (outside of the Planning Area) is in the planning stages. If approved, it could encompass over 5,700 acres of land adjacent to BLM-administered surface lands in the Planning Area. There are no existing renewable energy facilities in the Planning Area. No geothermal temperature systems have been identified and no future geothermal development is expected (BLM 2018b). Biomass products do exist in the Planning Area, primarily as wood residues of forest restoration projects. Refer to Section 3.10, *Forestry and Woodland Products*, for additional information on biomass. Refer to Chapter 2, Section 2.3.6, *Renewable Energy* (pages 118–119), in the AMS (BLM 2018b) for more information on renewable energy assessments in the Planning Area.

3.11.3 Environmental Consequences

3.11.3.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on lands and realty and renewable energy from implementation of the management alternatives. Maps 35 through 39 depict ROW avoidance and exclusion areas by alternative and Maps 40 through 43 depict areas recommended for withdrawal by alternative. Maps 44 through 53 depict solar and wind energy management by alternative.

Many of the program-specific management decisions will have the same or similar types of effects on lands and realty; therefore, impacts on lands and realty will also be similar. Impacts on lands and realty would primarily result from the following impact mechanisms:

- ROW avoidance/exclusion areas and resulting potential for these land use authorizations
- Land tenure adjustments

Analysis of impacts on lands and realty from these impact mechanisms is generally based on acreages of ROW avoidance and exclusion areas.

This analysis uses the following assumptions:

- Existing ROWs and communication sites will be managed to maintain valid existing rights and may be modified or amended if the action is consistent with the RMPs.
- The BLM will continue to process land tenure adjustments consistent with RMP goals and decisions.
- There are no lands identified for FLPMA Section 203 sales within the Planning Area. Land exchanges and acquisitions could be considered so long as the current owner is a willing participant, the action is in the public interest, and the action is in accordance with other

management goals and objectives. Exchanges and acquisitions in GSENM must also result in a net gain of objects and values within GSENM.

- Management actions for the following program areas are not addressed in detail in this comparative analysis because they would result in limited direct and indirect impacts on lands and realty, or in direct and indirect impacts that would not vary substantially by alternative: air quality, cultural resources, paleontological resources, soil and water resources, wild horses, forestry and woodland products, minerals, transportation, and social and economic considerations.

3.11.3.2 Direct and Indirect Effects

Management for fish and wildlife, special status species, lands with wilderness characteristics, vegetation, visual resources, livestock grazing, recreation, ACECs, national trails, scenic routes, Wild and Scenic Rivers (WSRs), and WSAs would result in direct, adverse impacts on lands and realty, as these areas generally have the greatest amount of ROW avoidance and exclusion areas and other restrictions that would limit land use authorizations. This could result in a reduction for the potential of new ROW authorizations and communications sites, or the need to construct utility corridors and communications sites in less-desirable locations.

Land tenure adjustments are typically used to facilitate access, improve management ability, and reduce conflicts in the Planning Area. Management actions that facilitate land exchanges or acquisitions would generally provide beneficial impacts on lands and realty given the land tenure adjustment is in the public interest or increases accessibility.

Impacts from ROW Avoidance/Exclusion Areas on Potential Land-Use Authorizations

Short- and long-term, direct, adverse impacts on lands and realty could result from the designation of ROW avoidance or exclusion areas. ROW avoidance and exclusion areas are applied in WSAs, WSR corridors, some ACECs and SRMAs/RMZs, and in some areas based on resource-specific protections (e.g., areas with steep slopes). ROW exclusion areas are typically not available for the location of ROWs, unless granted through an exception, modification, or waiver as indicated in Appendix H, *Stipulations and Exceptions, Modifications, and Waivers*. ROW avoidance areas may be available for ROW location pending site-specific analysis and additional terms and conditions. ROWs in ROW avoidance areas may require special design or siting requirements and could adversely affect the costs of implementation. In contrast, areas available for ROW development would have direct and indirect, short- and long-term, beneficial impacts on lands and realty by accommodating desired placement of facilities, accommodating access and efficient energy supply, and minimizing additional costs.

Table 3.11-1 provides the number of acres that would be excluded, avoided, or considered suitable for ROWs by alternative. Map 35 through Map 39 show locations of ROW avoidance and exclusion areas under each alternative.

Table 3.11-1. ROW Exclusion, Avoidance, and Suitable Areas within KEPA

ROW Designation	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
ROW exclusion areas (acres)	457,361	787,484	324,677	212,235	209,707
ROW avoidance areas (acres)	405,071	74,947	337,963	198,531	222,065
ROW open areas (acres)	0	0	199,791	451,666	430,659

Source: BLM 2018f
ROW – right-of-way, KEPA – Kanab-Escalante Planning Area

Alternative D would have the most beneficial impacts on ROWs because it has the least amount of area managed for ROW avoidance and exclusion, followed by Alternative E. In addition, alternatives D and E contain the fewest special designations and restrictions on resource uses that limit ROWs; however, both alternatives D and E manage the Upper Paria 1 and Lower Sheep Creek WSR segments as ROW avoidance areas. In contrast, Alternative B would have the greatest adverse impacts on ROWs because it would have the largest acreage of ROW exclusion and avoidance areas, including managing the Upper Paria 1, Lower Sheep Creek, and all other WSR suitable segments as ROW exclusion areas. Alternative C provides for 199,791 acres of area suitable for ROWs in KEPA while still managing for ROW exclusion and avoidance based on special designations (including the Upper Paria 1 and Lower Sheep Creek WSR segments), resource concerns, and other management goals and objectives (e.g., SRMAs). Alternatives C, D, and E allow ROWs in certain portions of GSENM determined to not have resource conflicts at this planning-level assessment (Maps 37 through 39). Alternatives D and E would also potentially allow ROWs within former SITLA inholdings surrounded by WSAs (Maps 38 and 39). Allowing these areas to be available to ROWs would provide opportunities for communication sites and signal towers in areas that are otherwise excluded from ROWs due to WSA status, which could improve public safety and emergency response in these remote areas. All ROW applications will require subsequent site-specific permitting including assessment of site-specific resource conflicts and application of appropriate design measures and BMPs.

In general, ROW avoidance and exclusion areas would also apply to utility-scale solar and wind energy development. Utility-scale renewable energy development is not available (i.e., excluded) in GSENM per the *PEIS for Solar Energy Development in Six Southwestern States* (BLM 2012d)[3] and the *Final PEIS on Wind Energy Development on BLM-Administered Lands in the Western United States* (BLM 2005a). Under all action alternatives, the majority of KEPA would be excluded from utility-scale solar energy development (Table 3-1), though alternatives D and E would have 2,472 acres as variance areas for solar energy development in the southern portion of the Planning Area (Maps 52 and 53), where solar energy could be considered consistent with the variance process described in the *PEIS for Solar Energy*

[3] The ROD for the Solar PEIS (BLM 2012h) amended the 2000 GSENM MMP to identify 8 acres of variance area. The variance area is likely due to a mapping error since the PEIS identified the lands contained in the Planning Area as not available for/excluded from utility-scale solar development. For the purposes of current management, the entire area is identified as not available/excluded.

Development in Six Southwestern States (BLM 2012d). Alternatives D and E would provide for the most area available for utility-scale wind energy development in KEPA (Table 3-1, Maps 47 and 48), while alternatives B and C would exclude wind energy development in the majority of KEPA (Table 3-1, Maps 45 and 46). Under all alternatives, proposals for utility-scale solar and wind energy development would require site-specific assessment and permitting.

All alternatives would recognize valid existing land use authorizations and manage 11,012 acres as designated ROW corridors (Map 34). These utility corridor ROWs include the existing Section 368 corridor, Energy Corridor #68-116, and the congressionally designated utility corridor along Highway 89 in Kane County, which extends 240 feet north and 500 feet south of the highway centerline (Map 34). Under all alternatives, these designated utility corridors could be utilized for utility infrastructure, transmission, or other appropriate development. New communication facilities would be required to be co-located with an existing communication site under Alternative B and Alternative C, although the latter allows for alternative siting when co-location is not feasible. Existing BLM guidance would be used for all communication site placements under Alternative A. Alternatives D and E would allow siting and development of communication facilities in any ROW open area and may provide the greatest beneficial impacts on the Lands and Realty program.

The Planning Area contains a number of special designation areas (e.g., WSAs), which generally limit areas open to ROW consideration. In general, impacts on ROWs and other land use authorizations would be similar across the three GSENM units based on the similar management applied in each unit.

Application of lands and realty BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect adverse impacts on lands and realty and on resources affected by ROW decisions. For example, locating ROWs for pipelines and roads within existing ROWs or disturbance areas would reduce the amount of new surface disturbance and associated impacts that would correspondingly reduce potential impacts on wildlife, visual resources, and other resources. Similarly, BMPs for transmission line and communication site design standards (e.g., non-electrocution standards, non-reflective materials) would further reduce potential impacts on raptors, wildlife, visual, and other resources.

Other land-use authorizations that would affect the lands and realty program include film permits. In general, all action alternatives would have similar impacts on the lands and realty program, as authorization of film permits would require site-specific NEPA assessments.

Impacts from Land Tenure Adjustments

The BLM strives to manage lands to meet the needs of internal and external customers and to preserve important resource values. In certain cases, the lands and realty program can experience long-term, direct, beneficial impacts by consolidating land ownership patterns and enhancing important resource values through land tenure adjustments.

Under all alternatives, land exchanges and acquisitions would be considered when they are in the public interest and result in a net gain of objects and values within the GSENM units, or a net gain of important and manageable resource values in KEPA lands. In general, long-term, beneficial impacts would result from these land tenure adjustments as a result of a more consolidated land management pattern.

Land tenure adjustments could also result in short-term, adverse impacts when used to withdraw lands from specific resource uses such as mineral entry and location. Under Alternative A, all lands in the Planning Area are assumed closed to new mineral leasing and under the action alternatives all lands in GSENM would be withdrawn from mineral entry, subject to valid existing rights. Alternatives D and E would recommend the least amount of new withdrawal area in KEPA (0 acres), followed by Alternative C (213,705 acres), with Alternative B having the greatest amount of area recommended for withdrawal in KEPA (506,995 acres).

Under all alternatives, and during implementation-level planning, the BLM would authorize only one access route to private land parcels through the GSENM units, unless public safety or local ordinances warranted additional routes. By requiring private landowners to coordinate on development across public lands, the BLM would be able to manage the number of routes within the GSENM units. The access route authorization requirements would apply under all alternatives and therefore all alternatives would provide similar levels of impact.

3.11.3.3 Cumulative Effects

The cumulative impacts analysis area for lands and realty is the Planning Area. Lands and realty in the Planning Area has historically been altered by the land exchanges that occurred with creation of the monument. The Lake Powell pipeline, Garkane Transmission ROW, South Central Buckskin to Page Buried Fiber Optic Line, South Central Johnson Canyon to Cannonville Buried Fiber Optic Line, solar development project near Big Water, Utah, expansion and development of U.S. Highway 89, and continued growth of other de facto utility corridors could all affect the lands and realty program (Appendix N, *Cumulative Impact Methodology and Past Present, and Reasonably Foreseeable Future Actions*). Among the alternatives, alternatives A and B would have the greatest likelihood of presenting adverse effects on ROWs in the Planning Area by having the greatest amount of ROW exclusion area, thereby reducing routing options and possibly increasing construction costs for utilities, while alternatives D and E would have the least likelihood of increasing potential cumulative impacts, with Alternative C falling in the middle. Alternatives D and E would result in the least adverse cumulative impacts on the potential route of the Lake Powell Pipeline, as there are fewer ROW avoidance areas and more ROW open areas along the potential pipeline route and its supporting infrastructure (i.e., powerlines, substations).

3.12 Livestock Grazing

3.12.1 Affected Environment

The analysis area for livestock grazing includes the Planning Area plus the extent of the livestock grazing allotments that intersect the Planning Area, some of which extend into the Glen Canyon NRA, BLM Arizona Strip Field Office, and BLM Kanab Field Office (Map 54).

Livestock grazing in the region dates back to the 1860s and during this initial settlement period, there was neither intensive grazing management on public lands nor established livestock numbers or seasons of use. As a result, the number of cattle, sheep, and horses rapidly increased until the early 1900s. After enactment of the Taylor Grazing Act in 1934, grazing allotments were created and the number and kind of livestock and season of use were established for the area. Livestock grazing use and allotted AUMs in the region have substantially decreased from their peak in the early part of the 20th Century.

Within the analysis area the BLM administers grazing allotments and permits in GSENM, Glen Canyon National NRA, Kanab Field Office, and Arizona Strip Field Office. There are 97 grazing allotments that overlap the analysis area including 79 active grazing allotments and 18 grazing allotments that are wholly or partially unavailable for livestock grazing. There are 91 permittees authorized to graze cattle and horses on the 79 active allotments. There are 2,053,617 acres available for livestock grazing within grazing allotments in the analysis area and 137,339 acres that are wholly or partially unavailable for livestock grazing (Table 3.12-1) (Map 54). Allotments that are wholly or partially unavailable for livestock grazing include 88,633 acres in the Glen Canyon NRA. An additional 35,457 acres within the analysis area are available for livestock grazing but are not being grazed, including 1,608 acres in the Glen Canyon NRA. The total permitted use in the analysis area is 106,202 AUMs, which includes 76,957 active AUMs (including from forage reserves) and 29,245 suspended AUMs. Refer to Chapter 2, Section 2.3.3, *Livestock Grazing* (pages 102–106), and Appendix 9, *Livestock Grazing*, Table 1 (pages 347–350), in the AMS (BLM 2018b) for more information on acreages, seasons of use, and AUMs for allotments in the Planning Area.

Table 3.12-1. Available, Unavailable, and Unallotted Acreage of Livestock Grazing Allotments within the Planning Area

Allotments	Grand Staircase Unit (acres)	Kaiparowits Unit (acres)	Escalante Canyons Unit (acres)	KEPA (acres)	Kanab Field Office[1] (acres)	Arizona Strip (acres)[1]	Glen Canyon NRA (acres)[1]
Allotments Available for Grazing	206,627	546711	187,669	831,566	50,222	2,317	228,505
Forage Reserve Allotments	-	-	14,603	-	-	-	-
Allotments Unavailable for Grazing	0	4,427	37,550	6,722	6	0	88,633

Source: BLM 2018f

[1] These acreages are included because GSENM has administrative responsibility for livestock grazing in these portions of the BLM's Kanab Field Office, Arizona Strip Field Office, and National Park Service-managed lands in Glen Canyon NRA.

KEPA – Kanab-Escalante Planning Area, NRA – National Recreation Area, BLM – Bureau of Land Management

There are a variety of structural and nonstructural range improvements across the Planning Area including fences, corrals, cattle guards, line cabins, water pipelines, well developments, spring development, stock ponds, water catchments, seedings, and vegetative enhancement projects. Range improvements are generally used to assist with livestock management but some are also used to assist with wildlife management (e.g., fences).

The BLM forecasts that the demand for livestock forage and livestock permits will continue and likely increase in the future. There is direct competition for forage and water between livestock and wildlife in some areas, especially in riparian areas. An overall increase in visitation in the area has also resulted in livestock grazing and recreation use conflicts (e.g., access issues, damage to range improvements).

3.12.2 Environmental Consequences

3.12.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on livestock grazing operations from implementation of the management alternatives. The BLM will manage the Planning Area using management specific to each program area (e.g., recreation, fish and wildlife, or vegetation). However, when assessing effects on livestock grazing, it is important to note that many of these program-specific management decisions will have the same or similar types of effects on livestock grazing; therefore, impacts on livestock grazing will be the same or similar. Impacts on livestock grazing would primarily result from the following impact mechanisms:

- Changes in land availability for livestock grazing and stocking rates
- Allowance for or restrictions on the construction or maintenance of new structural and nonstructural range improvements
- Changes in forage or livestock grazing management due to other program areas

Effects on livestock grazing from these impact mechanisms are generally described qualitatively, with acreages provided where appropriate to draw distinctions among the alternatives.

This analysis uses the following assumptions:

- All new and existing leases and permits would be subject to terms and conditions determined by the BLM authorized officer to achieve the management and resource condition objectives for BLM-administered surface lands and to meet BLM *Utah Standards for Rangeland Health* (BLM 1997). *Utah Standards for Rangeland Health* are assessed according to BLM Handbook H-4180-1, Rangeland Health Standards (BLM 2001).
- Structural range improvements, such as fences, pipelines, water wells, troughs, and reservoirs, could result in a localized or temporary loss of vegetation cover. Along water pipelines, vegetation would be reestablished through reclamation practices in the short term and to the extent possible. Areas with fences, water wells, troughs, and reservoirs could retain vegetation areas during their useful life and would be revegetated when abandoned.
- Range improvements lead to better livestock distribution and management options, which maintain or improve rangeland health. The construction of new range improvements and maintenance of existing range improvements would continue in the Planning Area as needed. New range improvements could be subject to limitations, as defined in these RMPs; applicable Memoranda of Understanding, agreements, or other plans concerning livestock grazing; and site-specific NEPA analysis.
- The BLM owns most water rights that are solely for livestock watering in the Planning Area, and permittee water rights in areas made unavailable for livestock grazing are not anticipated to be at risk for an abandonment or forfeiture proceeding. Any affected permittees could seek legal relief under Utah State Law or pursue a change application to an existing water right through the Utah State Engineer.
- Temporarily removing livestock during times of drought or post-vegetation disturbance could limit where permittees put their livestock; however, this may not affect the level of forage available overall, due to the temporary nature of such restrictions.

- While restrictions on the type and kind of livestock to cattle and horses near bighorn sheep habitat can result in a loss of flexibility and financial hardship for permittees, there are currently no sheep permitted in the Planning Area and therefore no reasonably foreseeable impacts.
- The BLM authorized officer must expressly exclude a permittee from cross-county OHV travel in areas designated as limited or closed to OHV use.

3.12.2.2 Direct and Indirect Effects

Impacts on livestock grazing are generally the result of activities that affect forage levels, areas available for grazing, class of livestock, season of use and timing, and the ability to construct range improvements, as well as disturbances or harassment of livestock in grazing allotments.

Impacts from Changes in Land Availability for Livestock Grazing and Stocking Rates

Impacts on permittees, including direct loss of forage and ability to distribute livestock, would occur if all or a portion of an allotment is made unavailable (or if reductions in utilization levels are required) to address issues of vegetation or riparian management or other resource concerns. The level of impact would depend on the number of allotments or portions of allotments made unavailable; the forage condition on the remaining allotments or portions of allotments, if applicable; and the degree of permittees' dependence on Federal lands for forage. If sufficient forage were not available on the remainder of the allotments, permittees would need to reduce Federal grazing use and reduce herd size or substitute alternative forage, which would typically reduce profits (Torell et al. 2014). Refer to Section 3.21, *Social and Economic Considerations*, for a description of social and economic impacts associated with reducing acres available for grazing and livestock forage AUMs.

Indirect impacts, including the need to construct fences for managing livestock to ensure they are excluded from unavailable areas, would also result from making areas unavailable for grazing. The need for increased management to implement these actions would increase time and costs for permittees. For example, there can be substantial economic constraints to installing exclusion fences (Agouridis et al. 2005). Implementing particular livestock grazing management actions could affect livestock grazing by increasing permittees' costs or changing management actions. Short-term and long-term costs to permittees could increase, or AUMs could decrease for some permittees due to change in season of use or livestock class, modification to grazing systems, or construction of range improvements or other approaches to meet rangeland condition objectives or to protect other resources.

As shown in Table 3.12-2, the alternatives vary in their effect on acres available for livestock grazing and stocking rates (expressed in AUMs). Alternative C management is similar to current management under Alternative A. Alternative B includes a decrease in available acres and active AUMs that could adversely affect livestock grazing, while alternatives D and E increase acres available for grazing and active AUMs. Alternatives B and C would make the entirety of the Escalante River Allotment unavailable for grazing (Maps 56 and 57), whereas alternatives D and E would only make the portions of the Escalante River Allotment in Glen Canyon NRA unavailable for grazing, and portions of the Escalante River Allotment in GSENM and KEPA would be available to grazing (Map 58). The reduced acreage of area unavailable for grazing

under alternatives D and E would generally benefit livestock grazing permittees compared to the other alternatives.

More restrictive grazing management under Alternative B, including staggering spring start times and requiring rest years for winter grazing lands, could require permittees to reduce the size of their operations or locate replacement forage elsewhere. Making portions of the Planning Area unavailable for livestock grazing could also disrupt the viability of current seasonal rotations or other management strategies that use combinations of Federal, State, and private lands. Under alternatives D and E, the beneficial increase in active AUMs would result from making more areas available for livestock grazing and implementing nonstructural range improvements to help reactivate suspended AUMs. Increasing permitting AUMs above 107,995 AUMs would require a plan amendment and additional NEPA analysis under Alternative E.

Table 3.12-2. Livestock Grazing Management by Alternative (and Percentage Change from Alternative A)

	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans)
Available for Livestock Grazing	2,053,617 acres	1,604,094 acres (-21%)	2,062,435 acres (<+1%)	2,136,602 acres (+4%)	2,136,602 acres (+4%)
Maximum Permitted AUMs	106,202	92,389 (-13%)	105,765 (<-1%)	107,995 (+2%)	107,995 (+2%)
Active AUMs	76,957	63,144 (-18%)	76,413 (-1%)	107,995 (+40%)	107,995 (+40%)

Source: BLM 2018f
AUM – animal unit month

Closing individual pastures in allotments to address resource degradation or other issues can have indirect adverse impacts on permittees where access to water is lost. Absent the development of new water sources, such closures can adversely affect the ability of the permittee to utilize all or part of their allotment. All alternatives manage certain pastures as unavailable for grazing, with alternatives D and E generally managing fewer pastures as unavailable for grazing and alternatives B and C managing more pastures as unavailable for grazing. For example, under Alternative B the entirety of the Big Bowns Bench Allotment would be unavailable for grazing, under Alternative C only the River Pasture in the Big Bowns Bench Allotment would be unavailable for grazing, and under alternatives D and E only the portion of the River Pasture in Glen Canyon NRA would be unavailable for grazing.

Allocating reserve common allotments as available for grazing under alternatives A, C, and E would provide additional opportunities to acquire grazing permits, but could also eliminate the flexibility to use these allotments if other allotments are designated temporary nonuse in emergency situations. Alternative C maintains and expands the acreage of reserve common allotments under Alternative A to facilitate grazing methods research within the GSENM units and to offset potential temporary reductions in existing allotments. Alternative E allocates the Upper River Pasture of the Phipps Allotment (1,800 acres) to a reserve common allotment that could also be used for scientific study and research. Alternatives B and D would not allocate

reserve common allotments. Under Alternative B, reserve common allotments would be unavailable for livestock grazing; under Alternative D, reserve common allotments would be allocated as available for grazing as regular permits.

Alternatives B, C, D, and E consider the use of reference sites as tools for improving livestock grazing management. Reference sites are locations, either within the Planning Area or in comparable plant communities/ecoregions on adjacent lands, where the BLM and NPS can compare objectives for native plant communities, riparian and wetland areas, and soils between grazed and ungrazed areas. Monitoring reference sites would determine which tools are successful in maintaining rangeland health for permittees and BLM and NPS specialists for the efficient management of livestock grazing. The size of sites, breadth of criteria analyzed, and application of exclosures and other tools under the reference site program is greatest under alternatives B, C, D, and E, respectively. Alternative B would result in a greater potential for beneficial information for livestock grazing permittees through the identification of new tools for managing grazing operations and maintaining rangeland health. Conversely, the application of larger (ungrazed) reference sites and additional livestock exclosures under Alternative B would reduce the area available for livestock grazing compared to alternatives C, D, and E, or Alternative A, which does not include reference area management. Given the existing science (e.g., Bowker et al. 2013), Alternative B is expected to result in a suspension of some permitted AUMs after the reference areas are established.

Impacts from Allowing or Restricting the Construction or Maintenance of New Structural and Nonstructural Range Improvements for Livestock

Adjustments to grazing management can alter available forage in the short term. As stated previously, making areas unavailable for grazing results in direct impacts through reduction in grazing use; however limiting distribution by restricting range improvement construction can result in indirect impacts by limiting the season of use or the ability to use available forage. In addition, not maintaining improvements can also reduce forage availability. The level of impact would depend on the percentage of individual allotments affected, the forage condition on affected allotments, and the degree that permittees depend on Federal lands for forage. In the long term, adjustments to grazing management could promote healthy forage and open up forage in areas that may not usually be available.

Constructing range improvements could improve livestock distribution and allow livestock to use more of the rangeland, which would consequently enhance rangeland conditions. Conversely, restricting range improvements could affect livestock operations by not supporting effective distribution and thus increasing the cost or time for management. In some cases, restrictions may limit the ability to fully use permitted AUMs; for example, restrictions affecting water development could limit use if capacity were limited by water distribution. Constructing offsite water sources and fencing riparian and spring sources could keep livestock away from sensitive riparian areas and provide a cleaner, more reliable water source for livestock. Future decisions on the construction of range improvements would be subject to additional review and NEPA analysis, which would take into account conditions on the ground and any overlapping resources and designations (e.g., the Upper Paria 1 and Lower Sheep Creek WSR suitable segments, which are managed as either scenic or recreational under all action alternatives).

Nonstructural range improvements designed to reduce the intrusion of nonnative annual grasses, such as cheatgrass, and the encroachment of shrubby vegetation could have short-

term impacts on livestock grazing, such as removing forage and requiring rest periods from grazing. However, these nonstructural range improvements would generally enhance rangeland conditions in the long term, including maintaining or improving the available forage, which is the amount of vegetation available for wildlife and livestock use (DiTomaso 2000; Vollmer and Vollmer 2008; Gottfried and Severson 1994). Long- and short-term impacts on grazing would be minimized when the primary objective of nonstructural range improvements is to support healthy rangeland ecosystems consistent with BLM *Utah Standards for Rangeland Health* (BLM 1997). On NPS-managed lands, additional criteria beyond BLM *Utah Standards for Rangeland Health* may be required, as specified in the 1999 Grazing Management Plan and other NPS policies.

Impacts from continued maintenance and development of new structural and nonstructural range improvements vary by alternative based on management restrictions. Alternative A generally provides limited guidance on the use of range improvements. Alternative B does not allow the development of water developments, vegetation treatments, or other structural or nonstructural range improvements for the sole purpose of increasing desired plant communities or forage availability for livestock. Such management would adversely affect permittees' ability to utilize existing or create new forage for livestock. Conversely, alternatives C, D, and E generally allow maintenance and development of new structural and nonstructural range improvements for livestock, benefitting permittees' grazing management on public lands.

Allowing for native and nonnative species to be used for nonstructural range improvements under alternatives C, D, and E gives grazing permittees options and flexibility to provide a higher quality or quantity of desired plant communities for livestock. Conversely, allowing use of only native plants and prohibiting seeding designed to increase forage under alternatives A and B limits a permittee's flexibility to provide desired plant communities for livestock forage, especially in cases where native vegetation does not germinate as well as nonnative plants. NPS management policies do not support the use of nonnative species for nonstructural range improvements in Glen Canyon NRA, eliminating the possibility of increased forage from nonnative species on these allotments under all alternatives. In Glen Canyon NRA, native seedings may be conducted for the purposes of ecological restoration actions, and could be conducted on allotments for that purpose. In addition, allowing maintenance of existing nonstructural range improvements using the full range of upland vegetation treatment methods and tools under alternatives C, D, and E would benefit livestock grazing permittees by providing the best chance for successful vegetation reestablishment. It should be noted that effects on ecosystem function and biodiversity may occur when nonnative species and nonstructural range improvements specifically to benefit livestock grazing are applied to the range; these effects may result in long-term changes to or degradation of the health of allotments. Refer to Section 3.7, *Vegetation and Fire and Fuels Management*, of this document for additional information on grazing management's effects on ecosystem function and biodiversity.

Alternatives B and C include the greatest restrictions and requirements on lands available for grazing and stocking rates (expressed as AUMs) to meet BLM *Utah Standards for Rangeland Health*, thereby increasing costs and limiting a permittee's flexibility and available management tools. These types of restrictions would be for, but are not limited to, placing salt blocks and altering the season of use, duration, and recovery periods based on monitoring data. Management under all alternatives requires adherence to *Utah Standards for Rangeland*

Health. Annual Allotment Management Plans would be specifically modified if the allotment is not meeting standards.

Impacts on Livestock Grazing from Other Program Management

Surface-disturbing activities associated with the development of mineral resources in KEPA, lands and realty, transportation and access, and ROWs and transmission corridors could result in direct, adverse impacts on livestock grazing where they disturb soils and remove forage. Installing permanent facilities or roads would result in long-term, adverse impacts through reductions in forage, while authorizations that include only initial disturbance that would be reclaimed would have only short-term impacts. Indirect, adverse impacts associated with surface-disturbing activities include an increased potential for the spread and establishment of nonnative invasive species that out-compete desired native and nonnative forage species. Management that limits surface disturbance by establishing ROW avoidance and exclusion areas, managing areas as VRM Classes I or II, applying surface-use stipulations to mineral and renewable energy development in KEPA, or through other means such as the restrictions in special designations would reduce the potential for surface disturbance and associated loss of forage. Conversely, prohibitions on surface-disturbing activities can result in adverse impacts on livestock grazing where they limit the ability to develop or maintain range improvements.

The potential for adverse direct and indirect impacts from surface-disturbing activities is greatest under alternatives D and E, followed by Alternative C, Alternative A, and Alternative B, respectively. Differences between the alternatives are driven by the degree of use restrictions on mineral development in KEPA, the availability of areas for issuance of new ROW and renewable energy permits in KEPA, the ability to develop range improvements, the creation of facilities and infrastructure for OHV use and recreation, and the extent and management of special designations in the alternatives. In KEPA, alternatives D and E contain the fewest special designations and restrictions on resource uses, followed by Alternative C, Alternative A, and Alternative B (refer to Table 3-1). In the three GSENM units, the potential for adverse direct and indirect impacts from surface disturbance is limited under all alternatives due to restrictions on development activities that apply to these units.

Limitations on group sizes, including in SRMAs/RMZs to better manage recreational use and to contain other restrictions on recreationist behavior (e.g., prohibitions on off-trail travel or fuel wood collection), would benefit livestock grazing by reducing potential damage to forage and disturbance/disruptions to livestock that can occur during recreational use. Dispersed camping can also directly affect livestock's ability to access water sources, corrals, and meadows that are important to permittees' grazing management. Water sources and meadows in particular are attractive to dispersed campers, and their use can lead to the displacement of livestock or damage to these resources. Alternatives B, C, and A (respectively) include the most protective management for recreation, and would have the greatest beneficial effects on livestock grazing associated with recreation management. Alternative D, followed by Alternative E, includes the fewest restrictions on dispersed camping and other recreational uses that could adversely affect livestock, forage, and permittees' grazing management. Alternatives D and E include the least amount of resource restrictions, which could increase livestock grazing management flexibility.

Management to meet habitat objectives or to protect other resources could affect stocking rates and forage availability for permittees. In general, vegetation management imposes short-

and long-term limitations on grazing. Examples include requiring rest periods and adjusting timing of grazing in order to meet resource objectives. As a result, site-specific direct and indirect impacts may occur, and costs and time required for livestock management would increase, with the level of impact depending on the extent and nature of treatments. In the long term, management of rangeland vegetation generally enhances vegetation conditions and indirectly affects livestock grazing by increasing vegetation productivity and improving forage conditions. Vegetation treatments designed to reduce the incursion of nonnative annual grasses, such as cheatgrass, the encroachment of shrubby vegetation, and the buildup of biomass could have short-term impacts on livestock grazing. Short-term impacts include removal of forage and required rest periods from grazing. However, these treatments generally enhance rangeland conditions by maintaining the forage base (the amount of vegetation available for wildlife and livestock use) in the long term.

Management practices to protect rangeland health indirectly affect grazing. Protecting water quality and watershed health to meet BLM *Utah Standards for Rangeland Health* in riparian and wetland areas could require changes in livestock management. Examples of this are deferring or shortening grazing periods, changing season of use, adding range improvements, excluding grazing from riparian areas, establishing riparian pastures, and increasing livestock herding. The level of impact would depend on the number of individual allotments or portions of allotments made unavailable and the forage condition on the remaining allotments or portions of allotments. These limitations could increase costs to permittees if changes were to indirectly reduce forage availability or increase management requirements. On NPS-managed lands, additional criteria beyond BLM *Utah Standards for Rangeland Health* may be required, as specified in the 1999 Grazing Management Plan and other NPS policies. Alternatively, treatments to improve land health, such as treatments on encroached pinyon-juniper, could also improve forage for livestock.

Alternatives D and E, C, and B (respectively) permit a broader range of vegetation, habitat management, and watershed improvement techniques than Alternative A, resulting in a greater potential for short-term, adverse and long-term, beneficial impacts on livestock grazing. Alternative A restricts the types of noxious weed and invasive species controls, vegetation treatments for pinyon-juniper encroachment, and other general habitat treatments that could occur. Such restrictions limit potential short-term, adverse effects from surface disturbance and vegetation removal, but eliminate the potential for long-term vegetation improvement in degraded vegetation communities. Alternatives B, C, D, and E would allow habitat treatments that benefit wildlife species and would actively manage big game habitat. These alternatives would result in some short-term disturbance to existing forage and the potential need for rest periods or grazing timing adjustments; however, treatments could enhance the forage base in the long term. Alternatives A and B also limit vegetation restoration activities to native species, resulting in potential long-term benefits to native vegetation community enhancement but eliminating potential short-term benefits from the ability to use desirable nonnative species to accelerate restoration activities. In contrast, alternatives C, D, and E allow the use of desirable nonnative species (in limited situations under Alternative C and where necessary to optimize land health, forage, and productivity in nonstructural range improvements under alternatives D and E).

Unlike the other alternatives, Alternative B suspends livestock grazing where objectives and BLM Utah *Standards for Rangeland Health* are not met and livestock grazing is a contributing or causal factor. Requiring suspensions, instead of considering the full suite of potential options to

move an allotment toward meeting standards and objectives, would increase potential adverse impacts from lost AUMs in the affected allotment. While all alternatives require monitoring for compliance with objectives and BLM Utah *Standards for Rangeland Health*, Alternative B and allotments in the Glen Canyon NRA under Alternative C include the most comprehensive monitoring measures and methods. As a result, management under alternatives B and C, respectively, would be more likely to identify rangeland health issues early (before long-term damage occurs) than would management under alternatives A, D, or E, or the GSENM allotments under Alternative C. Conversely, more rigorous monitoring could result in additional suspensions or other corrective actions that could adversely affect permittees' ability to use their allotments in the short term.

In general, alternatives that include more management restrictions and protections for resources (e.g., vegetation, wildlife) could reduce areas available for grazing and reduce livestock grazing management flexibility, resulting in adverse impacts. Alternatives D and E would generally have fewer management restrictions for resources and fewer resulting impacts on livestock grazing, compared to the other alternatives.

3.12.2.3 Cumulative Effects

The cumulative impacts analysis area for livestock grazing is the allotments overlapped by the Planning Area in their entirety. This cumulative impacts analysis area encompasses the full extent of the grazing allotments that intersect the Planning Area. In general, livestock grazing competes with recreation as the dominant use of the land and grazing relies on healthy rangeland conditions and acreage suitable and available for grazing. High visitor use in the Planning Area contributes to the degradation of forage vegetation through trampling from concentrated and dispersed pedestrian-based activities and dust deposition on vegetation from motorized activities. Trending increases in visitation and recreation use are anticipated to continue contributing to these cumulative impacts.

A variety of grazing management plans in the analysis area provide management direction for grazing activities that can contribute to cumulative impacts. These include the Capitol Reef National Park Livestock Grazing and Trailing Management Plan and Environmental Assessment, Kanab Field Office RMP, and Kane County Land Use Ordinance, Chapter 27, Escalante Region Multiple Use/Multiple Functions Grazing Zone. Refer to Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*, for more information.

Other activities in the Planning Area that would contribute to cumulative impacts on livestock grazing include surface disturbance related to mineral development and the granting of ROWs (e.g., Lake Powell pipeline). Depending on the type of ROW, some are revegetated and provide an improved forage condition while others may be un-reclaimed for the life of the use, such as roads. Surface disturbance and associated impacts would be the greatest under alternatives D and E, and the least under Alternative B. However, under all alternatives, mitigation measures and adaptive management would be considered and applied during site-specific permitting to reduce potential impacts on livestock grazing. Vegetation treatments and habitat improvement projects would have short-term, adverse impacts on livestock but provide long-term, beneficial impacts. Beneficial impacts resulting from habitat improvement projects would be the greatest under Alternative B and the least under alternatives D and E. Alternatives C, D. and E would

potentially result in the greatest beneficial impacts from upland vegetation treatments by implementing a broad range of strategies when compared to alternatives A and B.

Increased opportunities for public access, livestock grazing, and range improvement management on BLM-administered surface land may result in adverse impacts on lands managed by Glen Canyon NRA. Boundaries between the Planning Area and Glen Canyon NRA are often unsigned in remote portions of the Planning Area. Where BLM management is inconsistent or incompatible with management of adjacent areas, confusion by the public and permittees may lead to inadvertent damage to vegetation cover and soils on NPS lands by recreationists and potential increases in inadvertent trespass by permittees using OHVs for administrative access to their allotments or inadvertently moving their livestock onto NPS lands that are unavailable for grazing. Potential adverse impacts would be least likely under alternatives A and B, which generally manage grazing and other uses consistent with adjacent NPS lands, and greater under alternatives C, D, and E, which generally include fewer restrictions on access and grazing permittee operations than do adjacent NPS lands. However, alternatives D and E would consider measures consistent with the protection of Glen Canyon resources, values, and purposes including monitoring to prevent adverse impacts on soils, soil function, and biological soil crusts.

Under all alternatives, cumulative increases in GHG emissions and associated climate change effects could affect precipitation, vegetative health, and other ecological conditions that may adversely affect livestock grazing.

3.13 Minerals

3.13.1 Affected Environment

The analysis area for minerals is the Planning Area, including the GSENM units and KEPA. In accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, GSENM units are withdrawn from mineral entry, location, selection, sale, leasing, or other disposition under the public land laws, subject to valid existing rights. In addition, Division D, Title IV, Section 408 of the Consolidated Appropriations Act 2019 prohibits the BLM from expending appropriated funds on preleasing and leasing activities under the Mineral Leasing Act on lands excluded from GSENM by Presidential Proclamation 9682. Preleasing and leasing activities under the Mineral Leasing Act are separate and distinct from, and do not include, land use planning under FLPMA. The Consolidated Appropriations Act therefore does not prohibit the BLM from initiating and engaging in land use planning on the lands excluded from GSENM by Presidential Proclamation 9682 (i.e., KEPA lands).

There are 34 suspended oil and gas leases in the Circle Cliffs Special Tar Sand Area (Map 70), with one pending hydrocarbon lease application that covers the 34 leases (Map 71). Some of these leases are in the Escalante Canyons Unit and part are in KEPA (Map 71). Refer to Chapter 2, Section 2.3.4, *Minerals* (pages 106–109), in the AMS (BLM 2018b) for more information on valid existing rights in the Planning Area.

A total of 48 exploratory oil and gas wells have been drilled historically in the Planning Area, 26 of which are located in KEPA. All 48 wells have been plugged and abandoned. KEPA contains the only producing oil field in the Planning Area, the Upper Valley oil field, as well as tar sand deposits with high occurrence potential in the Circle Cliffs Special Tar Sand Area. The BLM has determined it is unlikely that much future drilling activity or development of tar sand deposits

will occur in the Planning Area due to high exploration risk, lack of infrastructure, and the remoteness of the region, among other factors, and does not reasonably foresee development of valid existing rights within GSENM (BLM 2018c). There is generally low potential for occurrence and low potential for development of other non-energy leasable minerals. Refer to Section 3.1.1, *Oil and Gas* (pages 27–37), Appendix B, *Oil and Gas Field-Size Classification* (page 69), and Maps 4, 5, and 7 through 16 in the *Mineral Potential Report* (BLM 2018c) for more information on the Upper Valley oil field classification, oil and gas wells and field locations, and occurrence and development potential of all oil and gas plays in KEPA. Refer to Section 3.1.3, *Tar Sands* (pages 43–44), and Map 19 in the *Mineral Potential Report* (BLM 2018c) for more information on tar sands deposits and occurrence and development potential in KEPA.

Kane County and Garfield County contain 54 percent and 22 percent of Utah's coal resources, respectively. Parts of the Alton coalfield and the Kaiparowits Plateau coalfield are located in KEPA and contain areas that are not unsuitable for coal mining (Map 65). All coal in the part of the Alton coalfield within KEPA is in an area identified as unsuitable for surface mining (and surface effects from underground mining) due to its proximity to Bryce Canyon National Park (BLM 2018c). The Kaiparowits Plateau coalfield has historically housed several small coal mine operations, and a large underground mine was in the planning stages before declaration of GSENM in 1996, giving the area high potential for development. Establishment of GSENM in 1996 closed the Planning Area to new coal leasing; however, under Presidential Proclamation 9682, lands that are now excluded from GSENM (i.e., KEPA) are available for coal leasing if found to be not unsuitable for leasing. Refer to Section 3.1.2, *Coal* (pages 37–43), and Maps 17 and 18 in the *Mineral Potential Report* (BLM 2018c) for more information on the quality and amount of coals, past coal mines, and the occurrence and development potential of coals in KEPA.

The only mining activity that has occurred for locatable minerals in the Planning Area is a small-scale extraction operation of sculpting-grade alabaster that is no longer operating. There is one existing mining claim on an alabaster deposit in KEPA. Due to the limited size or quality of locatable mineral deposits as well as their remote location, the BLM has determined development in KEPA will likely be limited to alabaster (BLM 2018c). Refer to Section 3.2, *Locatable Minerals* (pages 44–51), and Maps 20 through 22 in the *Mineral Potential Report* (BLM 2018c) for more information on locatable minerals deposits, occurrence, and development potential in KEPA.

Various mineral materials are found within KEPA. Currently, sand and gravel removal occurs in the Planning Area by way of a valid existing Material Site ROW authorization. It is likely that there will be continued interest in sand and gravel development for future road surfacing and maintenance activities (BLM 2018b). Refer to Section 3.3, *Salable Minerals* (pages 51–57), and Maps 24 through 28 in the *Mineral Potential Report* (BLM 2018c) for more information on mineral materials deposits, occurrences, and development potential in KEPA.

3.13.2 Environmental Consequences

3.13.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on minerals from implementation of management actions for resource and resource use programs. Maps 60 through 69 depict minerals management and allocations by alternative.

Many of the program-specific management decisions will have the same or similar types of effects on minerals. The primary impact mechanisms for minerals would be lease stipulations, closures, withdrawals from mineral entry, and constraints placed on mineral development and surface-disturbing activities. Impacts are assessed by a qualitative description of the constraint as well as a comparison of affected acreages across the alternatives.

The analysis uses the following assumptions:

- In accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, GSENM units are withdrawn from mineral entry, location, selection, sale, leasing, or other disposition under the public land laws, subject to valid existing rights. Mineral operations could only occur in the GSENM units under valid existing rights. Under Presidential Proclamation 9682, lands within KEPA are no longer withdrawn from mineral location, entry, disposal, or leasing. Despite the fact that the all mineral-related withdrawals have been lifted, for the purposes of this analysis, under Alternative A, it is assumed that the entire KEPA would be closed to mineral materials disposals and mineral leasing because these are discretionary uses that are not allowed under the existing Approved MMP and ROD (BLM 2000). Suspended leases are subject to valid existing rights pre-dating the original GSENM designation in 1996. Conversely, staking of mining claims and casual use could occur, and notice-level and plan-level operations could occur; however, the BLM would be required to complete project-specific NEPA review and analysis to approve a proposed plan of operations. Under the action alternatives, mineral leasing and mineral materials disposal could occur throughout KEPA, except where restricted by management actions. Locatable mineral entry, exploration, location, and operations could also occur throughout KEPA, except where withdrawn from operation of the mining laws.
- A total of 14 oil and gas wells (four exploration and ten new development/production wells) could be drilled during the next 15 years, which could result in a future surface disturbance of 322 acres. In addition, 302 acres of disturbance from seismic operations could occur. Approximately 527 acres of the total 624 acres potentially disturbed by drilling and seismic operations would be reclaimed (BLM 2018c).
- The estimated total surface disturbance from coal mining in the Planning Area would be fewer than 45 acres, including surface facilities and improvement to the access road. This development could support an underground mine covering roughly 10,000 acres (BLM 2018c).
- The RFD of 10 producing oil and gas wells and one coal mining operation that may contain multiple-seam development would vary by alternative because leasing constraints vary between the alternatives. Alternative D assumes that all 10 producing oil and gas wells and coal mining would be developed. Alternative C assumes the development of 5 oil and gas production wells and no coal mining. Alternative B assumes the development of 2 oil and gas wells and no coal mining.
- While the mineral materials commodities of sand and gravel, crushed stone, building stone, clay, and humates occur within the KEPA portion of the Planning Area, only sand and gravel are likely to be developed. This development would likely take the form of free-use permits or permits for community pits of 5 acres or fewer of unreclaimed area issued to county road departments to serve as maintenance materials for unpaved roads in the Planning Area (BLM 2018c).

3.13.2.2 Direct and Indirect Effects

Management for soil resources, special status plants, visual resources, recreation, water resources, fish and wildlife, lands and realty, cultural resources, ACECs, vegetation, WSAs, WSRs, special status animals, paleontological resources, and lands with wilderness characteristics could result in direct, adverse impacts on minerals. Impacts would result from management allocations and decisions that close or withdraw areas from mineral development or that place constraints on mineral development (e.g., NSO, CSU, timing limitation stipulation [TLS]). In contrast, management that does not limit or substantially constrain the Federal mineral estate to mineral entry, mining-claim location, or mineral leasing could result in direct beneficial impacts on mineral resource development. Management decisions that impose moderate constraints (TLS or CSU) on oil and gas leases could result in fewer potential adverse impacts on oil and gas resources than management decisions imposing major constraints (NSO). Management actions that close or restrict lands to mineral materials disposal could also have a direct adverse impact on the availability of mineral materials resources. Alternatives that close more acres would have the most adverse impacts, as the availability of mineral materials disposal sites can directly affect mineral materials exploration and development activities.

Impacts from Constraints on Mineral Development

Short- and long-term, direct, adverse impacts on minerals could result from closures or constraints applied to mineral development in KEPA. Mineral constraints include major constraints (e.g., NSO) and moderate constraints (e.g., CSU in certain wildlife habitats, TLS on development based on wildlife protective buffers). Restrictions of these activities would result in the temporary or permanent loss of opportunity for mineral exploration and development in KEPA. Refer to Appendix H, *Stipulations and Exceptions, Modifications, and Waivers*, for more information. Refer to Table 3-1 for acreages of mineral development closures and constraints by mineral type.

The potential for adverse direct impacts from constraints on mineral development in KEPA is greatest under Alternative A, and increasingly less under Alternative B, Alternative C, and alternatives D and E, respectively. Differences in direct, adverse impacts between the alternatives are driven by the type and degree of constraints applied, as well as the locations such measures would be applied in relation to the occurrence of mineral resources (Maps 60 through 69).

Alternatives that include more management restrictions and protections for resources (e.g., vegetation, visual resources, cultural resources) could reduce areas available for mineral development, resulting in adverse impacts. Alternatives D and E would generally have fewer management restrictions for resources and fewer resulting impacts on mineral development, compared to the other alternatives.

Impacts from Mineral Leasing Constraints

The application of mineral leasing constraints could result in direct, adverse impacts on minerals. Moderate constraints could result in the relocation of mineral facilities or restrict the time available to complete exploration and development activities. Major constraints, such as those applied to the Upper Paria 1 and Lower Sheep Creek WSR segments under alternatives D and E, could require directional drilling or other extraction methods to access mineral

resources. In certain cases exceptions, modifications, and waivers could be granted for mineral constraints, as described in Appendix H, *Stipulations and Exceptions, Modifications, and Waivers*.

In accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, GSENM units are withdrawn from mineral leasing, subject to valid existing rights. Table 3.13-1 below identifies the acres open to mineral leasing, open to leasing subject to moderate constraints, open to leasing subject to major constraints, and closed to/withdrawn from mineral leasing in KEPA under each alternative. Maps 60 through 64 depict leasable mineral management and allocations by alternative. For Alternative A, the analysis assumes that lands in KEPA would be closed to mineral leasing. Among the action alternatives, alternatives D and E would apply the least amount of constraints and limitations on mineral leasing, followed by Alternative C, with Alternative B having the most constraints on mineral leasing (Table 3.13-1).

Table 3.13-1. Mineral Leasing Stipulations in KEPA

Mineral Leasing Stipulation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Alternative D (Preferred Alternative) (acres)	Alternative E (Proposed Plans)
Open to leasing subject to moderate constraints (TLS and/or CSU)	0	32,420	374,772	547,102	529,898
Open to leasing subject to major constraints (NSO)	0	237,945	276,113	104,972	120,990
Closed to leasing	861,538	591,531	210, 891	209,699	210,885

Source: BLM 2018f
KEPA – Kanab-Escalante Planning Area, TLS – timing limitations, CSU – controlled surface use, NSO – no surface occupancy

Direct adverse impacts on minerals in the GSENM units would occur as a result of the units being managed consistent with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, which withdrew all Federal lands from mineral entry, location, leasing, or sale. Impacts on minerals across the three GSENM units would be similar based on the similar management in the three units.

The Circle Cliffs area of KEPA has high occurrence potential for various mineral resources including tar sands, sandstone, and oil and gas (Maps 70 through 72). Management to open the Circle Cliffs area to mineral development would provide a long-term beneficial impact on the minerals program and mineral extractive industries, although development may be unlikely due to the limited amount of existing infrastructure (e.g., roads, transmission lines, pipelines), proximity to Capital Reef National Park, and a lack of specific past interest in the Circle Cliffs deposits (BLM 2018c). Management to open the Alvey Wash area, just south of Escalante, to mineral leasing would also increase the beneficial impacts on minerals and extractive industries, as this area contains known coal deposits and is adjacent to a historic oil field (Maps 70 and 72).

Application of mineral BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect adverse impacts on minerals and other resources. For example, drilling of multiple wells from a single pad or use of closed drilling

systems could reduce potential adverse impacts associated with surface disturbance, as well as adverse impacts on wildlife and visual resources.

Impacts from Mineral Materials Disposal Restrictions

Management that limits the availability of mineral materials disposal sites would have an indirect, short-term, and adverse impact. In accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, GSENM units are withdrawn from mineral materials disposal, subject to valid existing rights. Maps 66 through 69 depict minerals material allocations and management by alternative. Among the action alternatives, Alternative C closes the fewest acres (153,258 acres) to mineral materials disposals in KEPA, followed by Alternative E (213,802 acres), Alternative D (225,586 acres), and Alternative B closing the most area to mineral materials disposal in KEPA (674,105acres).

Under alternatives B, C, D, and E, certain areas are closed to new exclusive mineral materials pits; however, alternatives B, C, and E allow expansion of existing pits and open the same areas to community pits consisting of 5 acres of unreclaimed area (Maps 66 through 69). Allowing expansion of existing pits and new community pits under alternatives B, C, and E would reduce potential impacts on mineral materials disposal in these areas compared to Alternative B, which closes all mineral materials disposals in these areas.

Impacts from Locatable Minerals Withdrawals

Presidential Proclamation 6920 withdrew all lands in GSENM from mineral location and entry and lands remaining in GSENM continue to be withdrawn under Presidential Proclamation 9682. As a result, impacts on locatable mineral development in GSENM would be the same under all alternatives. Under Presidential Proclamation 9682, lands within KEPA are no longer withdrawn from mineral location, entry, disposal, or leasing. Staking of mining claims and casual use and notice-level and plan-level operations could occur; however, the BLM would be required to complete project-specific NEPA review and analysis to approve a proposed plan of operations. In general, management that recommends new areas for withdrawal from mineral location and entry would have adverse impacts by reducing potential locatable mineral development. Alternatives A, D, and E would have the fewest potential impacts on locatable mineral development due to the least amount of new area being recommended for withdrawal in KEPA (0 acres). Alternative B would have the greatest potential impacts on locatable mineral development due to the greatest amount of area being recommended for new withdrawals in KEPA (506,995 acres), followed by Alternative C, with 213,705 acres being recommended for new withdrawals in KEPA.

Impacts from Coal Unsuitability

Coal resource decisions directly affect the extent to which lands can be made available for coal leasing and development. In accordance with Presidential Proclamation 6920, as modified by Presidential Proclamation 9682, GSENM units are withdrawn from mineral leasing, including coal development. Alternatives B, C, D, and E employ management actions that close 75,076 acres in KEPA to surface coal mining operations based on coal unsuitability criteria (43 CFR 3461) (Map 65). Under each of these action alternatives, additional areas could be found not unsuitable or unsuitable for surface coal mining operations as a result of site-specific analysis. Alternatives B, C, D, and E would provide beneficial impacts on minerals by retaining some lands in the Kaiparowits coalfield as not unsuitable for surface coal mining operations (Map

65). This coalfield is rated high for development potential outside of WSAs (BLM 2018c), although there is a current lack of infrastructure and an overall declining market for coal. See Appendix L, *Coal Unsuitability Report*, for more detail on coal unsuitability decisions in the Planning Area.

3.13.2.3 Cumulative Effects

The cumulative impacts analysis area for minerals is the Planning Area. This area encompasses the extent of mineral resources that could be affected by management decisions. Mineral development in the Planning Area has historically been altered by GSENM designation and subsequent State-Federal land exchange in 1997 (Appendix N, *Cumulative Impact Methodology and Past Present, and Reasonably Foreseeable Future Actions*). Adverse impacts would result from land uses and land use designations that are incompatible with mineral development. Examples include the designation of new or expanded special designations or an increase in recreation areas as the local population grows. Cumulative impacts would also result from past, present, and reasonably foreseeable mineral development projects that extract minerals and remove them from future use, such as historic and ongoing development in the Upper Valley Field.

Among the alternatives, alternatives D and E would have the greatest likelihood of reducing potential adverse cumulative impacts, while Alternative A would have the greatest likelihood of increasing potential adverse cumulative impacts on minerals. In contrast, population growth could also increase construction and infrastructure improvement needs, which would lead to cumulative impacts by increasing demand for mineral materials, subject to broader market conditions and availability of materials. Closing areas to mineral materials disposal could make local sources of sand and gravel inaccessible to the BLM, transportation departments, and other entities to meet increasing infrastructure demands.

3.14 Recreation and Visitor Services

3.14.1 Affected Environment

The analysis area for recreation consists of the Planning Area (Map 73). A variety of dispersed uses occur in the Planning Area, including hiking, camping, backpacking, OHV, auto-touring, equestrian, canyoneering, rock climbing, wildlife viewing, photography, hunting, trapping, target shooting, and backcountry aviation. Recreation use in the Planning Area is associated with general leisure; education; and historical, cultural, and religious activities. Popular recreation destinations include hiking and backpacking use in the Escalante and Paria Canyons areas; scenic viewing and hiking along HITRR; OHV use in the Nephi Pasture region; and auto-touring along the Burr Trail, Cottonwood Canyon Road, Skutumpah Road, and State Highways 12 and 89. Calf Creek and Deer Creek are two popular developed recreation sites with campgrounds.

Recreation tourism is a vital part of the local economies. More than half of all private jobs in Garfield County (54 percent) were tourism-related in 2016, with similarly high percentages in Kane County (42 percent) (Gardner Policy Institute 2016). The Planning Area lies directly in the middle of the "Mighty Five" national parks, the name given to Utah's major National Parks (Zion, Bryce, Arches, Canyonlands, and Capitol Reef National Parks), and contributes to the attractiveness of this park system. The Escalante Canyons and Kaiparowits Units also serve as the primary entrance points into the adjacent Escalante District of Glen Canyon NRA. Recreation use in the Planning Area and throughout southwestern Utah continues to rise. For

example, visitation numbers at Zion and Bryce Canyon National Parks have more than doubled since 2007 (NPS 2011).

Recreation visits to the Planning Area increased approximately 38 percent from 2007 to 2017, and total recreation visitation in 2017 was estimated at 982,993 visits (BLM 2018b). In 2018 total recreation visitation was estimated at 1,157,916 visits, which represents an approximate 18 percent increase in visitation compared to 2017 (BLM 2019c).

Actual visitor numbers are likely higher than estimated due to multiple access points, lack of permit compliance, and the inability to count visitation in every location. Many areas lack direct visitation monitoring facilities such as traffic counters or visitor registers. The BLM reports recreation visitation estimates using the Recreation Management Information System, an internal database. The database estimates participation in recreation activities recorded at BLM sites and areas by the number of participants/visitors and visitor-days; these estimates are based on registrations, permit records, observations, and professional judgment. Refer to Chapter 2, Section 2.3.5, *Recreation* (pages 109–118), in the AMS (BLM 2018b) for more information on recreation visitation.

Increases in recreation use are due to a combination of social and environmental conditions in Utah and neighboring States, as well as the overall growing trend of people visiting public lands. Marketing campaigns for tourism, displacement of visitors from National Parks due to crowding, rising leisure time and money, increasing retired populations, population growth, and new recreation types contribute to more recreation use in the Planning Area.

OHV use has become a substantial component of recreational use. This increase is due to growing OHV popularity, changes in demographics, increased commercial availability (purchase and rental opportunities), and marketing of multi-passenger OHVs. OHV travel is currently limited to designated routes. However, some locations receive unmanaged, intensive OHV use based on landscape characteristics and easy access from local communities.

Recreation management areas are the BLM's primary means for managing recreational use of public lands. BLM lands can be identified as a SRMA or an ERMA. SRMAs are areas "where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance, and/or distinctiveness, especially compared to other areas used for recreation" (BLM Handbook 8320-1). ERMAs are areas "that require specific management consideration in order to address recreation use, demand, or recreation and visitor services program investments" (Handbook 8320-1).

Based on the GSENM Final EIS and Proposed RMP (BLM 1999a), four management zones (MZs) exist within the Planning Area. These zones identify the location, type of recreational setting, group size, and subsequent opportunities likely to be available to users. Furthermore, two recreation areas that existed prior to monument designation were retained after designation: Calf Creek and Deer Creek recreation areas. These areas are highly used destinations. Table 3.14-1 provides a list of the SRMAs, ERMAs, and MZs with acres by unit. Refer to Chapter 2, Section 2.3.5, *Recreation* (pages 109–117), and Appendix 10, *Recreation* (pages 357–363), in the AMS (BLM 2018b) for more information and descriptions of SRMAs and MZs, along with developed recreation sites within them.

Table 3.14-1. SRMA, ERMA, and MZ by Administrative Unit

Management Area	Grand Staircase Unit (acres)	Kaiparowits Unit (acres)	Escalante Canyons Unit (acres)	KEPA (acres)
Escalante Canyons SRMA	-	33,434	233,995	244,915
Paria/Hackberry SRMA	92,106	77,298	-	104,306
Paria Canyon and Plateaus SRMA	-	-	-	30,011
Fiftymile Mountain SRMA	-	99,401	-	58,203
Highway 12 Corridor SRMA	-	1,871	8,758	14,016
Highway 89 Corridor SRMA	1,036	5,121	-	35,145
Frontcountry MZ	3,167	9,937	8,758	566,668
Passage MZ	1,281	4,911	4,782	28,136
Outback MZ	123,440	79,583	2,012	332,598
Primitive MZ	82,011	456,488	227,201	444,443

Source: BLM 2018f
SRMA – Special Recreation Management Area, ERMA – Extensive Recreation Management Area, MZ – management zone, KEPA – Kanab-Escalante Planning Area

As authorized by the Federal Lands Recreation Enhancement Act, there are five types of uses for which Special Recreation Permits (SRPs) are required: commercial, competitive, vending, individual or group use in special areas, and organized group activity and event use. SRPs are issued to outfitters, guides, vendors, recreation clubs, and commercial competitive event organizers that provide recreation opportunities or services without using permanent facilities. The permits are issued to manage visitor use, protect natural and cultural resources, and accommodate commercial recreation uses. The BLM issues SRPs for non-commercial use in certain special areas where a permit system for individual use would achieve management objectives. Large non-commercial group activities outside developed campgrounds 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. Key recreational activities can be estimated through recreation activities requiring SRPs. The demand for SRPs to conduct commercial services on public lands has increased 227 percent over the past 17 years, from 35 to 121 SRPs. These activities are anticipated to continue to increase, especially along State Highways 12 and 89, as the public continues to spend more time on public lands. Refer to Chapter 2, Section 2.3.5, *Recreation* (pages 109–117), and Appendix 10, *Recreation* (pages 357–363), in the AMS (BLM 2018b) for more information on SRPs.

3.14.2 Environmental Consequences

3.14.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on recreation opportunities and experiences due to implementation of the management alternatives. Maps 74 through 78 depict SRMAs, RMZs, and ERMAs by alternative.

Impacts on recreation from management of other resources or resource uses are primarily in the form of changes to available recreation opportunities or recreation settings and experiences. Impacts on recreation would primarily result from the following mechanisms:

- SRMA and ERMA designations
- Surface-disturbing activities
- Management of human and visitor health and safety
- Special designations

This impact analysis is based on the following assumptions:

- Tourism and recreation use within the Planning Area will continue to increase during the life of the RMPs.
- Increasing recreation/natural resource conflicts and non-motorized/motorized conflicts will cause an escalation of damage to resources and public safety concerns.
- There will be sufficient opportunities within the Planning Area to meet the demand of non-motorized recreation (e.g., hiking, mountain biking, and horseback riding).
- In areas managed as available for grazing, the incidence of interactions between recreationists and livestock grazing operations will increase with rising recreation use.

3.14.2.2 Direct and Indirect Effects

Management for forestry and woodland products, lands and realty, livestock grazing and range improvements, mineral development in KEPA, transportation and access, vegetation, and fire and fuels may result in direct adverse impacts on recreation opportunities and experiences. Development and management of these resources and resource uses may create health and safety concerns for the recreational user such as noise, dust, and vehicle conflicts; adverse effects on recreation experiences through damage to recreation settings and perceptions of naturalness; or reduced or restricted access to recreation areas. Fire and fuels management and vegetation treatments generally result in short-term direct effects on settings, access, and experiences, but may result in long-term beneficial effects on recreation settings where they improve and restore vegetation communities. Change to the landscape that can be seen from popular recreation sites, trails, or auto-touring drives (e.g., Highway 12) could affect the recreation setting and the potential to realize certain recreation experiences.

Management for special designations, cultural resources, paleontology, visual resources, fish and wildlife, and other resources has the potential to both adversely and beneficially affect recreation. Management to preserve and enhance fish and wildlife habitat is generally supportive of protecting recreation opportunities and experiences through preservation of the natural setting and maintenance of healthy wildlife populations for hunting or wildlife viewing. Conversely, fish and wildlife management can restrict the season of use or recreation opportunities available at a given location, such as through seasonal restrictions on access to big game seasonal habitats for OHVs or climbing closures on cliffs with nesting raptors. Similar to fish and wildlife management, measures to protect soil and water, visual resources, and special designations can be both adverse and beneficial to recreational opportunities and experiences. Where these measures limit changes to the natural setting, they can benefit primitive recreational experience, where such settings are important. For example, WSAs are managed and maintained to provide opportunities for unique recreation opportunities in a primitive setting by limiting development. Conversely, restrictions associated with these programs can limit the ability to engage in certain activities, for example limits on OHV activities in WSAs, or the ability to construct new recreation facilities.

Designating SRMAs, RMZs, and ERMAs is beneficial toward the recreation opportunities and settings for which those areas were designated.

Impacts from Designation of Recreation Management Areas

SRMAs and RMZs set distinct recreation management strategies for identified values and characteristics at discrete locations, resulting in beneficial impacts on recreational use. Recreation planning across BLM-administered surface lands has shifted to an outcome-focused management framework. Each SRMA and RMZ has specific measurable outcomes, focused objectives, and associated management actions that provide a beneficial impact by guiding the amount and type of uses allowed. ERMA management is commensurate and considered in context with the management of other resources and resource uses. RMZs, which can be included as discrete units within an SRMA or ERMA, have a distinctive recreation character, provide opportunities for a different experience and benefit outcome, and require a different set of management actions. Maps 74 through 78 depict SRMAs, RMZs, and ERMAs by alternative.

Designation of SRMAs and RMZs, and, to a lesser extent, ERMAs, would have long-term beneficial effects on the management and protection of specific recreation opportunities and experiences. Table 3.14-2 shows the number and acres of SRMAs and/or RMZs for each alternative. Alternative D and Alternative E include the largest acreage of land in ERMAs. In some cases, SRMAs and ERMAs cross administrative units; however, each recreation management area would be managed consistently across administrative units.

Recreation management area frameworks have been developed for each SRMA, ERMA, and RMZ (Appendix R, *Recreation Management Areas*). These frameworks identify the key elements of the proposed recreation management areas, including targeted recreation activities, experiences, benefits, outcomes, allowable use activities, and management actions associated with each area. Impacts would vary depending on the number and size of the recreation management areas. Recreation management areas under alternatives B and C are generally managed for the same activities, experiences, benefits, and outcomes and, as a result, these alternatives generally implement consistent recreation management strategies. However, because Alternative B applies additional restrictions compared to Alternative C on the amount and type of recreation opportunities and the ability to host competitive events and motorized/mechanized activities, management under Alternative B would benefit natural and biological uses and recreation users seeking solitude and primitive opportunities to a greater extent than would Alternative C. Alternative A includes six SRMAs and four MZs that, similar to SRMA management under alternatives B, C, and E, set location, type of recreational setting, group size, and recreation opportunities. Alternative A management for SRMAs and MZs was developed before substantial increases in visitation occurred following monument designation; as a result, management for these areas is generally less prescriptive than SRMA/RMZ management under alternatives B, C, and E, which addresses issues occurring due to the current high level of visitation (e.g., firewood collection and the proliferation of dispersed campsites). Alternative D does not include SRMAs and designates only a small portion of the Planning Area as RMZs. Alternative E includes five SRMAs that contain seven RMZs and two ERMAs that contain two RMZs for locations where recreation focus is needed to manage high levels of use and to address facility/infrastructure needs.

All action alternatives manage a portion of the Planning Area as an ERMAs, with the largest such designation under alternatives D and E, respectively. Unlike SRMAs, ERMAs do not include specific measureable recreation outcomes, and therefore their management is generally less prescriptive on allowable recreation activities, experiences, and associated management and allocation decisions. Because they are less prescriptive, ERMAs can provide greater management flexibility to adapt to changes in recreational use and facility/infrastructure needs. However, should visitation continue to increase as anticipated, management of large portions of the Planning Area as ERMAs could limit the BLM's ability to allocate funding and resources to address issues.

Table 3.14-2. SRMAs, ERMAs, MZs, and RMZs by Alternative

	Alternative A (number/acres)	Alternative B (number/acres)	Alternative C (number/acres)	Alternative D (Preferred Alternative) (number/acres)	Alternative E (Proposed Plans) (number/acres)
SRMA	6/1,039,650	9/1,189,765	9/1,189,765	0/0	5/61,839
ERMA	-	1/678,694	1/678,694	1/1,835,630	2/1,793,106
RMZ	-	7/34,650	7/102,569	4/30,132	9/17,559
Frontcountry MZ	1/78,530	-	-	-	-
Passage MZ	1/39,110	-	-	-	-
Outback MZ	1/537,633	-	-	-	-
Primitive MZ	1/1,210,103	-	-	-	-

Source: BLM 2018f
SRMA – Special Recreation Management Area, ERMA – Extensive Recreation Management Area, MZ – management zone, RMZ – Recreation Management Zone

The action alternatives (alternatives B, C, D, and E) contain a range of recreation decisions associated with SRMAs/ERMAs/RMZs, including organized event and group size limits, campfire restrictions, permitting systems for overnight camping, waste management, burn restrictions for waste wood and debris, and vending at recreation sites. The action alternatives also include a decision for allowable group sizes within WSAs, with Alternative B limiting group sizes in WSAs to 8 people, Alternative C limiting group sizes in WSAs to 12 people, and alternatives D and E limiting group sizes in WSAs to 25 people (except in certain SRMAs and RMZs overlapping WSAs under Alternative E). In addition, under Alternative E the BLM would limit group sizes in WSAs to 25 people. However, for Alternative E, group sizes over 25 people could be considered and approved on a case-by-case basis and group size limits could also be adjusted within WSAs for consistency with group size limits on adjacent lands, which could provide additional management flexibility compared to other alternatives.

Group sizes outside of WSAs vary by recreation management area designation and by alternative. Alternatives B and C do not include group size limits along paved road areas, Alternative B includes a group size limit of 25 people along primary collector roads (Burr Trail, Hole-in–the Rock, Cottonwood, and Skutumpah Roads), and Alternative C includes a group size limit of 50 people along primary collector roads. Alternatives D and E include a group size limit of 50 people across the entirety of ERMA areas. Group sizes in SRMA and RMZs typically range from 12 to 50 people under alternatives B, C, and D, with larger or unrestricted group sizes

allowed in the Little Desert RMZ. Under Alternative E, group size limits in SRMAs are typically 50 people, though group size would be limited to 25 people in the Dry Fork Wash, Devils Garden, and 20-Mile Dinosaur Track RMZs and outside of the Lower Calf Creek Falls Trail in the Calf Creek SRMA. Similar to management under Alternative C, Alternative E would not restrict group sizes in the Little Desert RMZ. Refer to Section 2.3.14, *Recreation and Visitor Services,* for additional information on recreation management within SRMAs, RMZs, and ERMAs. Under all alternatives, group sizes above these limits could be approved by the authorized officer.

More restrictive group size limits would generally be favored by smaller groups seeking a more primitive recreation experience, while fewer restrictions would generally favor larger groups seeking a more social recreation experience. The State of Utah has larger than average families when compared to other States. The number of individuals per household, combined with close-knit community and religious culture, can result in conflicts between large group events and activities and group size limits. Group size limits are frequently used by the BLM, NPS, and U.S. Forest Service as a tool to limit the frequency of encounters with other groups in backcountry environments and minimize ecological impacts such as trampling of vegetation, displacement of wildlife, and changes in water quality created by soil erosion and human waste. In general, applying more restrictive decisions (e.g., lower group sizes, limitations on camping) could decrease the effects of human activities on water quality, fish and wildlife, vegetation, and other natural and cultural resources. Management decisions that are not necessarily related to group size also have the ability to minimize ecological impacts. For example, limiting restrictions on campfires and fuelwood collection may prevent unintentional human-caused wildfire ignitions and damage to living and downed and deadwood vegetation that provides habitat for wildlife.

Alternatives B and C include the most restrictive recreation decisions. As a result, beneficial impacts from recreation decisions on those seeking primitive small-group recreation experiences and reduced adverse effects from recreation on other resources would be greatest under Alternative B, followed by Alternative C. Alternative D and, to a lesser extent, Alternative E manage the majority of the Planning Area as ERMAs in which recreation decisions are generally less restrictive (e.g., larger allowable group sizes and fewer restrictions on campfires). As a result, alternatives D and E would generally benefit those seeking social and large-group experiences to a greater extent than alternatives B and C. Less-restrictive recreation management under alternatives D and E would also do less to reduce adverse effects from recreation on other resources than would management under alternatives B or C. In the long term, less-restrictive management could damage recreation settings and result in long-term adverse effects on recreational experiences. However, less-restrictive management under Alternatives D and E could provide additional management flexibility.

Impacts from Surface-Disturbing and Development Activities

Surface-disturbing activities can have adverse impacts on recreation through the displacement of recreationists, reduction of opportunities for solitude, and degradation of natural recreation settings (Bureau of Reclamation 2016). Within KEPA, the locations where surface-disturbing activities are most likely to adversely affect recreation are locations with potential for mineral or ROW development and high recreation use. Therefore, the BLM anticipates the areas with greatest potential to be adversely affected include the Circle Cliffs, Escalante Canyons, Highway 12, Burr Trail, Paria-Hackberry, HITRR, and Nephi Pasture SRMAs and RMZ. Mineral development in the Circle Cliffs area would require the improvement of Burr Trail, which would

have adverse impacts by reducing the naturalness setting and increasing traffic along the route and in local communities. Primary travel corridors (e.g., HITRR, Highway 12, and Highway 89) provide scenic driving experiences, which could be adversely affected by mineral development along the routes or through increased traffic on the routes. Adverse impacts from mineral and ROW development would be greatest on experiences of recreationists seeking natural landscapes, because these activities could alter the natural character of the areas. Certain types of adventure/skill-based OHV and mechanized forms of recreation activities could be compatible with certain ground-disturbing activities, although the experience of these recreational users could be still be adversely affected by the presence of the mineral or ROW developments.

Surface-disturbing developments may also require the construction of new roads or the improvement of existing roads. Construction of new roads and paving and/or resurfacing of existing gravel roads can reduce the diversity of recreation experiences for users seeking challenging, remote, and primitive experiences. Road improvements also increase access, which can lead to increases in visitation and associated impacts on recreation setting and the quality of recreation experiences.

Increasing the potential for development and resource use could affect recreational settings, experiences, and access. Opportunities for surface-disturbing development in KEPA and resulting displacement of recreationists, reduction of opportunities for solitude, and degradation of natural recreation settings would increase under alternatives D and E compared to alternatives C, A, and B, respectively. Refer to Table 3-1 for a summary of allocation decisions by alternative.

Management of surface disturbance in the GSENM units is similar under all alternatives. In general, the ability to authorize mineral, ROW, or other developments in the GSENM units would be limited, and the associated effects on recreation across the three GSENM units would be similar and correspondingly limited. Presidential Proclamation 9682 states that the BLM may authorize ecological restoration and active vegetation management activities in the GSENM units. In general, ecological restoration and active vegetation treatment activities in the GSENM units would be similar under the alternatives, and could affect recreational settings, experiences, and access in the short term.

Application of BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect adverse impacts on recreation from other program area management. For example, vegetation and fire management would be required to sustain desired qualities of naturalness near developed recreation facilities. However, some BMPs, such as recreation use and access restrictions for threatened, endangered, or special status species, may have adverse impacts on certain recreation activities and at certain times of the year.

Impacts on Visitor Health and Safety

The majority of the Planning Area is managed for dispersed recreational opportunities, with few developed campgrounds, restrooms, and amenities beyond the visitor centers and contact stations in adjacent communities. As visitation increases, the potential for effects on health and safety also rises due to the variety of uses, density of users, and inappropriate use of resources by visitors. Impacts from unmanaged visitation increases can include conflicts between incompatible uses, decreased water quality from human and dog waste, degradation

of vegetation, and undesirable recreation settings from livestock and human waste (e.g., bad odors and sights). These impacts are typically more severe in popular recreation destinations where the facilities are inadequate for the increased levels of recreational use. In particular, narrow and slot canyons with high visitation (e.g., canyons along HITRR and Paria River) offer limited ability to provide sanitation facilities and minimal control on use levels and separation of use.

All alternatives include management that would provide beneficial impacts on recreation settings and conditions and on visitor health and safety, especially in highly visited areas. This beneficial management includes allowing future consideration of campgrounds or designated dispersed camping areas and new parking lots and restrooms along open travel routes, as well as requiring the use of disposable, self-contained human waste management systems within 300 feet of water sources.

The presence of livestock in areas used for recreation could adversely affect the recreational setting for some users due to the presence of cow manure, cows in constrained areas (e.g., slot canyons), trail damage and water quality effects in wet areas, trampling of vegetation, and fencing (see Section 3.6, *Soil and Water Resources*). In general, alternatives D and E, which allow more livestock on public lands and grazing in more locations in the Planning Area, would be more likely to result in adverse effects due to conflict between recreationists and livestock. Table 3-1 shows acreages available for livestock grazing and AUMs allocated to livestock for each alternative. Making the Little Desert RMZ unavailable for livestock grazing under Alternative C would benefit OHV recreational users in the proposed open OHV area by avoiding collisions between vehicles and livestock.

Application of BMPs identified in Appendix G, *Best Management Practices*, for resource and resource uses would generally reduce the potential for direct and indirect adverse impacts on recreation from livestock grazing by minimizing interactions between recreationists and livestock. Additionally, developing facilities for sanitation would minimize impacts on resource values and public health and safety by addressing user demand and reducing potential surface water quality impacts.

Impacts from Special Designations and other Management Restrictions

Special designations and other classifications, such as VRM and OHV designations, would create both adverse and beneficial impacts on recreation depending on the type of activity and the desired experience. ACECs, WSAs, WSRs, and scenic routes are managed to protect and preserve the unique values and characteristics for which they were designated. Management of areas under special designations would provide for protected scenic quality, improved fish and wildlife habitat, and opportunities for remoteness. In KEPA, Alternative B and Alternative A include the most restrictive management for the protection of resources and special designations, followed by Alternative C, and alternatives D and E, respectively (Table 3-1). As a result, the beneficial effects on natural settings and primitive recreation experiences would be greater under alternatives B and A, compared to alternatives C, D, and E. Similarly, the adverse effects from restrictions to access, limits on certain recreation activities, and development of recreation facilities would be greater under alternatives B and A than under alternatives C, D, and E. Conversely, alternatives D and E would provide additional management flexibility to develop recreation facilities and infrastructure to address potential changing recreation needs (e.g., new camping facilities to address future demand). Management in the GSENM units

under all alternatives is oriented toward resource protection and the proper care and management of monument objects. GSENM unit management would therefore increase beneficial impacts on primitive recreation settings and experiences, and adversely affect access for certain recreation activities and development of recreation facilities.

VRM protects and maintains recreation settings by limiting the degree of contrast new activities are permitted to create on the landscape. Alternative B includes the most restrictive VRM, followed by alternatives A, C, D, and E, respectively (Table 3-1). In general, more restrictive VRM benefits recreational users, particularly those interested in remote and primitive experiences. Conversely, restrictive VRM and special designations management can limit the potential to develop new recreation facilities that may be desired by those seeking amenities or to develop social recreation opportunities. Alternative E allows additional flexibility when compared to Alternative D because it allows an exception to VRM Class II for the development of public or recreation infrastructure.

3.14.2.3 Cumulative Effects

The cumulative impacts analysis area for recreation is the Planning Area and surrounding public land accessible to recreation users. This area includes recreation areas that could be directly affected by management decisions and surrounding public lands that could also experience recreation impacts due to management decisions in the Planning Area. Cumulative impacts may result from activities in adjacent communities, recreation and visitation to nearby public lands, and resource use activities (e.g., mineral development). Past, present, and reasonably foreseeable recreation projects in the analysis area could contribute to cumulative impacts. These projects include recreation area site improvements in Calf Creek, HITRR repair projects, Dry Fork facilities development projects, and other recreation site improvement projects identified in Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions.* In general, these projects would contribute to beneficial cumulative impacts by improving recreation facilities. Past, present, and reasonably foreseeable future minerals and energy development projects, such as development of the Alton Coal Tract and solar development near Big Water on SITLA lands and ongoing oil and gas development in the Upper Valley Field, could degrade recreation experiences and contribute to adverse impacts on recreation.

If recreation demands continue to increase across the State of Utah in general, and in the "Mighty Five" National Parks in southern Utah near GSENM in particular, visitors seeking small-group, primitive, and unconfined recreation experiences may choose to visit the Planning Area instead. All alternatives include SRMAs and/or RMZs that identify where the BLM would generally prioritize the expenditure of funding and resources for recreation management, though the size of these recreation management areas varies by alternative. Alternatives D and E, which manage the majority of the Planning Area under less-prescriptive ERMA management, may also provide additional management flexibility to adapt to future changes in recreation use and needs and to address resource conflicts associated with increasing recreation through the development of new recreation facilities and infrastructure.

Management decisions on BLM-administered surface lands that are inconsistent with management on adjacent public lands, such as allowing mineral development in the Circle Cliffs area under alternatives C, D, and E, could affect recreation use in the cumulative impacts analysis area. Such development affects scenic qualities and views for recreationists, in

particular from areas that overlook large portions of KEPA, like Bryce Canyon National Park. KEPA also includes popular access routes for areas like Capital Reef National Park and travel routes used by visitors touring the "Mighty Five" National Parks and the adjacent Glen Canyon NRA. Development in KEPA under alternatives C, D, or E could affect scenic quality for visitors using these routes to access these adjacent recreation areas. Conversely, management in adjacent areas that is consistent may benefit recreationists. For example, managing portions of the Planning Area directly adjacent to Glen Canyon NRA (e.g., HITRR SRMA) for smaller group sizes and primitive recreation would lead to consistent management. In many cases, visitors may start their visit on BLM-administered surface lands and cross into NPS-managed lands; the remoteness of the many portions of the Planning Area make it difficult to identify the transition between land ownership, and recreationists could benefit from consistent management and expectations between the areas.

3.15 Travel and Transportation Management

3.15.1 Affected Environment

The analysis area for transportation is the Planning Area, and includes Federal and State highways, BLM roads, county road systems, and private roads (Map 79). All OHV and mechanized (e.g., bicycles) travel within the Planning Area is limited to designated routes (43 CFR 8340) located outside the Primitive Zone; the Primitive Zone is closed to OHV and mechanized travel, unless designated for an administrative or authorized use. Area designations by administrative unit are shown in Table 3.15-1. Mechanized travel is allowed on trails designated for that use as well as on routes and areas designated for OHV use, unless specifically prohibited. The transportation system within the Planning Area encompasses 908 miles of designated routes in the Frontcountry, Passage, and Outback Zones as well as portions of State Highways 12 and 89.

Table 3.15-1. Existing Travel Designations by Administrative Unit

Travel Designations	Grand Staircase Unit (acres)	Kaiparowits Unit (acres)	Escalante Canyons Unit (acres)	KEPA (acres)	Total
Open	0	0	0	0	0
Limited (Frontcountry, Passage, and Outback Zones)	127,889	94,431	15,552	417,536	655,408
Closed (Primitive Zone)	82,011	456,448	227,201	444,476	1,210,137

Source: BLM 2018f
KEPA – Kanab-Escalante Planning Area

In addition to arterial and collector routes, there are numerous smaller routes that connect more remote locations to the larger routes. These smaller routes are used for recreational purposes, access to range improvements, forestry product areas, and inholdings not managed by the BLM. The majority of these routes are not paved and most are unimproved, consisting of dirt, clay, or gravel surfaces. The Planning Area also includes abandoned backcountry airstrips on public land, some of which are within WSAs. The Boulder Airstrip is the only airstrip maintained and identified in the current MMP.

Many routes change over time due to flooding, a lack of use, or simply because the route crosses rock or sand dunes. Route braiding and a proliferation of rock cairns occur throughout the Planning Area.

The majority of the transportation use on existing routes is defined as casual use. Other travel uses include administrative use and authorized actions, associated with livestock grazing, forestry, and emergency purposes. Routes also provide administrative use access to mining claims and mineral leases in areas formerly part of GSENM.

OHVs are used in the Planning Area for recreational and non-recreational (administrative) purposes. Much of the administrative use involves all-terrain vehicles/utility task vehicles driven by local ranchers for administration of their grazing operations. Administrative all-terrain vehicle/utility task vehicle use occurs in association with permitted uses and is authorized on a case-by-case basis. In addition to non-recreational uses, OHV use has become a popular means of transportation for recreational hunting, fishing, or camping and a form of recreation in itself. More information about recreational OHV use is provided in Section 3.14, *Recreation and Visitor Services*, of this document.

Visitation and recreation use is increasing in Kane and Garfield Counties, which is expected to result in increased public demand on some routes and destinations within the existing transportation system in the Planning Area. Informal pullouts have resulted from increased visitation at key points of interest such as HITRR. Increased travel across public lands by motorized, mechanized, and non-motorized equipment could increase the need to manage, maintain, and improve the current transportation system. The undeveloped nature of the area is highly valued by the public and any development or improvements would need to be carefully considered.

3.15.2 Environmental Consequences

3.15.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on travel and transportation management due to implementation of the management alternatives. Maps 79 through 83 depict travel management by alternative.

Impacts on resources and resource use resulting from implementation of the transportation program are discussed in the relevant resource sections of this chapter. Impacts on travel and transportation would primarily result from the following impact mechanisms:

- Changes to the route network
- Designation of OHV areas
- Lands and realty actions and mineral development

The analysis was based on the following assumptions:

- The State of Utah and counties may hold valid existing ROWs in the Planning Area pursuant to Revised Statute (R.S.) 2477, Act of July 28, 1866, Chapter 262, 8,14; Stat. 252, 253, codified at 43 U.S.C. 932. Congress repealed R.S. 2477 through passage of the FLPMA of 1976. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's travel management planning process. These RMPs are founded on an independently determined purpose and need that is based on resource uses and associated access to public lands and waters. These RMPs are not intended to provide any evidence

bearing on or addressing the validity of any R.S. 2477 assertions and do not adjudicate, analyze, or otherwise determine the validity of claimed ROWs. Nothing in these RMPs extinguishes any valid ROW, or alters in any way the legal rights the State and counties have to assert and protect R.S. 2477 rights or to challenge in Federal court or other appropriate venue any use restrictions imposed by the plans that they believe are inconsistent with their rights. At such time as an administrative determination acknowledges a ROW or a binding judicial decision confirms a ROW, the BLM will adjust its travel management plan accordingly if necessary.

- Tourism and recreation use within the Planning Area will continue to increase during the life of the RMPs.
- Increases in transportation and access will cause an increase in resource damage and concerns of public safety.
- Travel off designated or existing routes and the creation of social trails has occurred and will likely continue.
- TMPs will be prepared after the completion of the RMPs and will direct route designations in areas designated as limited to OHV use. Public input and comments on the route network will be taken during the TMP planning process.
- During the future TMP process, per Presidential Proclamation 6920 as modified by Presidential Proclamation 9682, the BLM will consider designation of OHV use and mechanical transport on primitive routes and ways that existed during the original inventory and were available for use immediately before the issuance of Presidential Proclamation 6920.
- Existing and valid rights for permittees, ROW holders, and other authorized uses are not affected.

3.15.2.2 Direct and Indirect Effects

Management for lands and realty, fish and wildlife, minerals, special designations, and recreation may result in impacts on travel and transportation management. For example, management that limits or restricts access based on the values of protecting and enhancing habitat, special status species, or other resources would have an adverse impact on transportation. Management that allows mineral development and ROW permits in KEPA may have an adverse or beneficial impact, depending on the location and the availability of the associated infrastructure for future public use. New roads built for mineral exploration and development, for example, could increase access if they are integrated in the transportation system for use by the public. Certain designations on BLM-administered surface land can contain restrictions on travel that adversely affect transportation and access, including recreation management areas; ACECs, WSAs, and other special designations; and management of lands with wilderness characteristics to preserve their wilderness characteristics.

Delineation of Travel Management Areas

Travel management areas (TMAs) are a planning tool for delineating a sub-unit of the Planning Area where unique travel management circumstances result in the need for particular focus and additional analysis. Alternatives B, C, D, and E delineate the Planning Area into the following TMAs:

1. KEPA in Garfield County

- HITRR
- Circle Cliffs

2. KEPA in Kane County
3. Grand Staircase Unit
4. Kaiparowits Unit
5. Escalante Canyons Unit

While the TMA delineations cover the entire Planning Area for alternatives B, C, D, and E, adjustments to TMA boundaries may be made prior to conducting travel management planning. Alternatives B, C, and D would prioritize the development of TMPs in the order identified above. The prioritization for developing TMPs was based on issues identified through internal and external scoping. KEPA in Garfield County is divided into the HITRR and Circle Cliffs TMAs; increasing tourism and visitation, coupled with potential mineral exploration in the Circle Cliffs, make transportation planning in these areas a priority. Alternative E does not apply a priority order for the development of the TMPs listed above.

Route designations within the TMAs are implementation-level decisions that will be analyzed and approved in accordance with 43 CFR 8342.1 separately through the TMP process. The TMP process evaluates and designates routes to provide for a high-quality travel network for a wide variety of uses. The TMP provides a process for determining a comprehensive and maintainable route network, while meeting resource management needs. Presidential Proclamation 9862 directs the BLM to consider routes mapped in 1996. During the development of these RMPs/EIS, Kane and Garfield Counties submitted maps illustrating routes that they believe existed prior to issuance of the original GSENM Presidential Proclamation on September 18, 1996. The BLM is in the process of reviewing this information and will take this information into consideration when initiating implementation-level travel planning. Subsequent transportation management planning following the development of the RMPs will include analysis of these routes for inclusion in TMP(s). Under all action alternatives, TMPs will consider monument objects and values and opportunities for non-motorized/mechanized trails. In addition, the TMP process under alternatives C, D, and E will consider designating routes in the TMAs consistent with the counties' submitted route maps. Examples of beneficial impacts of designating routes through a TMP include the promotion of safety for all users; minimization of conflict among various uses of public lands; and reduction in route redundancy, resource degradation, and habitat fragmentation within the Planning Area. TMPs may also provide an opportunity for coordinating transportation planning with Kane and Garfield Counties or adjacent communities. Such coordination could reduce access issues and management conflicts, improve the safety and convenience of the traveling public, and provide a more sustainable use of resources. Under Alternative A, the BLM would continue to manage the Planning Area route network under the decisions made during the previous land use planning process. Alternative A management would not include the benefit of a system-wide reevaluation to ensure designated routes are meeting current management needs.

Until TMPs are completed, OHV use will be managed in accordance with the existing GSENM TMP (BLM 2000).

Impacts from Changes to the GSENM Route Network

The addition of specific routes to the existing GSENM TMP for the Planning Area is an implementation-level decision. Alternatives A, B, and C do not propose changes to the existing GSENM TMP as part of this land use planning effort. Alternatives D and E would amend the

current GSENM TMP to include the V-Road and Inchworm Arch Road as open and available for OHV use, and Alternative D would also include Flagpoint Road (off BLM road 532) (Maps 82 and 83). These additional routes are currently used by local residents and tourists to access certain archaeological and geological sites, and their inclusion in the GSENM TMP would be beneficial to these users by allowing continued and legal access. Because alternatives A, B, and C do not include these additional routes, neither the beneficial nor the adverse impacts anticipated under alternatives D and E would occur under those alternatives. Appendix K, *Interdisciplinary Route Evaluation Forms and Analysis*, provides detailed site-specific analysis of the impacts associated with potential inclusion of these three routes in the existing GSENM TMP. Inclusion of these routes as open and available for OHV use could result in impacts on cultural and paleontological resources, non-motorized recreation and travel, soil and water resources, wildlife, and other resources and uses.

Impacts from OHV Area Designations

All public lands are required to have OHV area designations (43 CFR part 1600 and part 8342.1). Areas must be designated as open, limited, or closed to OHV travel. Open areas allow all types of vehicle use at all times. Limited areas are restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but are generally within the following categories: number of vehicles, types of vehicles, time or season of vehicle use, permitted or licensed use only, use on existing routes, use on designated routes, and other restrictions. Closed areas are unavailable for OHV use. The BLM authorized officer may expressly authorize use of OHVs in closed areas, because such expressly authorized OHV use is exempt from the OHV regulations per 43 CFR 8340. The criteria used to make the area designations are based on the management described in the alternatives.

Under Alternative A, all OHV and mechanized travel within the Planning Area is limited to designated routes (43 CFR 8340) located outside the Primitive Zone, and the Primitive Zone is closed to OHV and mechanized travel unless designated for an administrative or authorized use. Under alternatives B, C, D, and E, OHV and mechanized travel is designated as limited to routes specifically designated for such use and routes open to OHV use. See Table 3.15-2 for the acreage of OHV designations by alternative.

Compared to Alternative A, Alternative B would close more area to OHV use while alternatives C, D, and E would increase OHV open areas and substantially decrease OHV closed areas compared to Alternative A (Table 3.15-1). Alternative B closes all WSAs and lands with wilderness characteristics to OHV use, and all alternatives would close any new unauthorized routes in WSAs that were not present during the original inventory during the TMP process. Alternative C identifies closed areas as the Steep Creek WSA, WSRs (wild sections), the mesa top of the No Mans Mesa Research Natural Area, and Wolverine Petrified Wood. The No Mans Mesa relict plant community is also closed to OHV use under Alternative E. In the majority of cases, areas that are designated as closed are not highly used or already have limited or no travel routes because of existing special designations that already restrict OHV travel. Management under Alternative B is most likely to adversely affect transportation and access for OHVs due to the scale of OHV closures. Management under Alternative D is most likely to beneficially affect OHV use, as it manages all of the Planning Area under OHV open or limited designations, followed by alternatives E, which manages a relatively small area of OHV closed designation in No Man's Mesa Research Natural Area. Alternatives C, D, and E management

allowing cross-country OHV use in some (alternatives C and E) or all (Alternative D) of the Little Desert RMZ (Maps 81 through 83) would beneficially affect OHV recreational users to this area.

Open OHV areas provide beneficial recreational experiences for some users; however, those seeking pristine or quiet-use recreation opportunities could be adversely affected. Open OHV areas are a unique recreation experience and may provide beneficial economic and tourism impacts on neighboring communities. Providing an area for those seeking this type of activity may help avoid instances of cross-country OHV travel in closed or limited areas.

Under Alternative A, travel and transportation is managed consistent with the current transportation route map and OHV use is either limited or closed (Map 79). Map 79 shows routes that would be open for public use and those available for administrative use only; all other routes are closed.

Table 3.15-2. Travel Management Designations by Alternative

Travel Designations	Alternative A	Alternative B	Alternative C	Alternative D (Preferred Alternative)	Alternative E (Proposed Plans) (number/acres)
Open	0	0	116	2,528	116
Limited	655,408	448,955	1,801,163	1,863,552	1,864,500
Closed	1,210,137	1,417,124	64,801	0	1,464

Source: BLM 2018f

Impacts from the Management of Lands and Realty and Mineral Development

Land exchanges and acquisitions can increase opportunities to consolidate public lands, improve access, and facilitate travel in portions of the Planning Area. Any land acquired by the BLM would require evaluation of impacts on recreational access and would be managed similarly to the existing OHV area designations of adjoining BLM lands, or as stated, or implied, in the transfer. Mineral development and the issuance of ROWs can sometimes expand the transportation network, but can also create short-term adverse impacts on the transportation system in the form of temporary closures, increased traffic and congestion on routes, and more frequent maintenance. Alternatives D, E, C, B, and A, respectively, have the largest area open and available for mineral development, and available for ROW and utility-scale solar and wind energy permitting in KEPA (refer to Table 3-1).

3.15.2.3 Cumulative Effects

The cumulative impacts analysis area is the Planning Area, the extent of transportation routes that intersect the Planning Area, and transportation routes in areas adjacent to the Planning Area. This area encompasses the full extent of transportation routes that could experience impacts resulting from management decisions in combination with other past, present, and reasonably foreseeable actions. Transportation and road networks adjacent to BLM-administered surface lands in the Planning Area include routes maintained by other Federal, State, and county agencies and private landowners. Maintenance of Federal and State highways would provide arterial connections to BLM roads and county-maintained routes and would improve access throughout the Planning Area. However, the RMPs will not affect use of existing State or Federal highways or county-maintained roads. Potential increases in traffic

from development in KEPA under alternatives C, D, and E, in combination with traffic associated with local residents and visitors in the cumulative impacts analysis area and traffic associated with mineral development (e.g., Alton Coal Mine), could cumulatively affect traffic and road conditions.

See Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*, for a list of past, present, and future projects that could result in cumulative effects with the alternatives.

3.16 Areas of Critical Environmental Concern

3.16.1 Affected Environment

The analysis area for ACECs is the Planning Area. ACECs are areas on BLM-administered surface lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values or fish and wildlife resources or other natural systems or processes; or to protect life and safety from natural hazards. BLM regulations for implementing the ACEC provisions of FLPMA are found in 43 CFR 1610.7-2(b).

There are no existing ACECs in the Planning Area. During the development of the GSENM MMP, the BLM determined the protections provided by the national monument designation were adequate to protect the values identified and no special management was required (BLM 1999a).

A request for ACEC nominations was issued during the public scoping period (BLM 2018a), and new nominations were received for KEPA. The process used to evaluate nominations for ACECs is described in Appendix S, *Areas of Critical Environmental Concern Evaluation Report*. The BLM interdisciplinary team evaluated 1,193,077 acres (including some overlapping acreages) that were nominated as ACECs. Of these, 14 areas totaling 309,044 acres met the criteria for R&I values, resources, natural systems or processes, or hazards/safety/public welfare (referred to collectively as values) and were identified as potential ACECs for consideration in the land use planning process.

Other special management designations that existed prior to monument designation, and were retained after monument designation, include:

- Calf Creek Recreation Area
- Deer Creek Recreation Area
- Devils Garden Outstanding Natural Area
- Dance Hall Rock Historic Site
- Escalante Canyons Outstanding Natural Area (tracts 2, 3, and 4 are included in the North Escalante Canyon/The Gulch Instant Study Area [ISA] and tracts 1 and 5 are separate)
- North Escalante Canyon Outstanding Natural Area
- The Gulch Outstanding Natural Area
- Phipps-Death Hollow Outstanding Natural Area
- No Mans Mesa Research Natural Area
- Wolverine Petrified Wood Natural Environmental Area

Of these special management designations, a portion of Devils Garden Outstanding Natural Area, a portion of Dance Hall Rock Historic Site, Escalante Canyons Tract 5 ISA Complex, and a

small portion of Wolverine Petrified Wood Natural Environmental Area are located on lands that have been excluded from GSENM and now occur in KEPA.

3.16.2 Environmental Consequences

3.16.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on areas eligible for ACEC designation from implementation of the management alternatives. ACECs are only designated under alternatives B and C. Maps 84 and 85 depict ACEC designations by alternative.

Impacts on areas eligible for ACEC designation would primarily result from management that affects the identified R&I values. The BLM is required to defend or guard against damage or loss of the identified R&I values, either through management prescriptions specifically for the ACEC or, absent the ACEC designation, through other management sufficient to protect the values.

Effects on areas eligible for ACEC designation from this impact mechanism are generally described in a qualitative fashion, with acreages provided where appropriate to draw distinctions among the alternatives.

This analysis uses the following assumptions:

- The 14 potential ACECs in Alternative B are the basis for describing the geographic locations of R&I values across the alternatives.
- The BLM will implement monitoring and adaptive management (Appendix I, *Monitoring Strategy*) to protect R&I values.
- Because ACEC values include wildlife, visual resources, cultural resources, paleontological resources, and other resources, the assumptions used in the analyses of those resources apply to the analysis of ACECs; those resource-specific assumptions are not repeated here.

3.16.2.2 Direct and Indirect Effects

In general, management that restricts, limits, or prohibits surface disturbance and development in and adjacent to ACECs in the short and long terms generally reduces adverse impacts on identified R&I values identified in the Planning Area. Overlapping special designations (e.g., WSAs) generally confer additional benefits on the values for which ACECs are designated. Management that maintains and enhances natural processes therein, including habitat restoration activities and some vegetation treatments, could be beneficial to certain R&I values over the long term, but may result in short-term, adverse impacts on ACEC values. Management under some alternatives may result in more prevalent use of avoidance strategies to reduce adverse impacts on R&I values, whereas other alternatives would be more likely to minimize or mitigate impacts.

Nominated ACECs designations by alternative are shown in Table 3.16-1 and are depicted on Maps 84 and 85. While no ACECs are designated in Alternative A, some nominated ACECs overlap with Primitive or Outback Zones, which would provide protection to identified R&I values. Primitive Zones generally preclude ROWs, mechanized vegetation treatments, and OHV closures, while Outback zones allow these activities with substantial restrictions. Alternative B designates all 14 potential ACECs (approximately 309,044 acres), and closes these areas to surface-disturbing mineral activities and a variety of other activities.

WSAs provide comparable protections for R&I values as the ACECs would provide. Table 3.16-1 shows the acres that overlap or are outside of WSAs under Alternative B (that represent the geographic locations of R&I values across the alternatives). Alternative C designates five of the 14 potential ACECs (130,997 acres) outside of WSAs, and allows some surface-disturbing mineral development in KEPA and other activities where consistent with protection of R&I values. Alternatives D and E do not designate any potential ACECs, and any protection for R&I values would be incidental to management for other program areas.

Table 3.16-1. ACEC Designations and Overlap with WSAs for Alternative B

Nominated ACEC	R&I Values	Alternative B (acres)	Overlap with WSA (acres)	No overlap with WSA (acres)	Percentage outside of WSA (%)
Alvey Wash	Historic/cultural and paleontological; natural process or system	29,935	15,227	14,707	49%
Bulldog Bench	Historic/cultural: Paleontological	361	0	361	100%
Butler Valley	Scenic, natural process or system	15,780	48	15,732	99%
Circle Cliffs	Historic/cultural, scenic, fish and wildlife	26,706	0	26,706	100%
Cockscomb East	Historic/cultural and paleontological scenic, geologic, and natural process or system	42,100	9,416	32,684	78%
Cockscomb West	Historic/cultural, scenic, and natural process or system	40,475	13	40,462	99%
Collet Top	Scenic, historic/cultural, natural process or system	9,218	1,012	8,206	89%
Henderson/ Pardner	Historic/cultural: Paleontological and scenic	12,259	10,401	1,858	15%
Hole-in-the-Rock Trail	Historic/cultural, natural processor system	60,772	5,760	55,013	91%
Paria River	Historic/cultural, scenic, and natural process or system	180	153	27	15%
Scorpion Flat/ Dry Fork	Scenic	30,691	27,894	2,798	9%
Straight Cliffs/ Fiftymile Bench	Historic/cultural and scenic	21,357	1,035	20,322	95%
Tibbet Head	Historic/cultural: Paleontological, natural process/system	19,079	204	18,874	99%
Wahweap Hoodoos	Natural process or system	130	130	0	0%

Source: BLM 2018f
ACEC – Area of Critical Environmental Concern, R&I – relevance and importance, WSA – Wilderness Study Area

General Impacts on R&I Values

Threats of irreparable damage to historic/cultural, paleontological, geologic, scenic, and natural R&I values include destruction due to ground-disturbing actions or collection of cultural

resources and/or paleontological materials as a result of recreational use, livestock grazing and range improvements, mineral development, rock climbing, and other surface-disturbing activities. Threats of irreparable damage to scenic and natural R&I values also include activities that cause landscape or habitat fragmentation.

See Section 3.2, *Cultural Resources*, and Section 3.5, *Paleontological Resources*, for more detailed discussion of these resources. In accordance with NHPA Section 106 (applicable only to cultural resources and historic properties), future management actions carried out by the BLM under any of the alternatives must avoid, minimize, or mitigate direct and indirect impacts on historic properties. Although the Section 106 process ensures resolution of any adverse effects on historic properties, management under some alternatives may result in more prevalent use of avoidance strategies to reduce adverse impacts on R&I values, whereas other alternatives would be more likely to minimize or mitigate impacts. The Paleontological Resources Preservation Act of 2009 (16 U.S.C. 470aaa–aaa-11) further requires the BLM to manage and protect paleontological resources on Federal land. Under all action alternatives, measures would also be taken to avoid impacts on unique specimens if surface-disturbing activities uncover paleontological resources, as well as to proactively manage scientifically significant fossils through development and implementation of a Paleontological RMP in PFYC Class 4 and 5 areas.

The alternatives provide a variety of management direction that would limit adverse effects on paleontological R&I values. Alternative A closes all areas to mineral leasing, while alternatives A and B also prohibit casual collection of paleontological materials, which would help protect the identified R&I values from irreparable damage. In KEPA, alternatives C, D, and E allow casual collection of common invertebrate and plant paleontological resources, except in limited locations (Maps 11 through 13). While casual collection would not permit the removal of the types of scientifically significant fossils that constitute identified paleontological R&I values, some inadvertent loss of significant specimens could occur.

In general, VRM Class I and II management would avoid, minimize, or mitigate surface-disturbing activities and landscape fragmentation that could adversely affect visual and natural R&I values to a greater degree than would VRM Class III and IV management. More restrictive management under VRM Class I and II limits the type and location of development in an area, reducing the potential for visual and fragmentation impacts. Table 3.16-2 shows the acres of potential ACECs (from Alternative B) that overlap VRM Class I and II areas under Alternative E (Proposed Plans). See Section 3.8, *Visual Resources, Dark Night Skies, and Natural Soundscapes*, for a discussion of general effects on visual resource values from the management alternatives. Maps 35 through 39 depict ROW avoidance and exclusion areas by alternative. Refer to Section 3.3, *Fish, Wildlife, and Special Status Species*, and Section 3.7, *Vegetation and Fire and Fuels Management*, for a discussion of general effects on natural landscape values from the management alternatives.

Table 3.16-2. Potential ACEC Overlap with Alternative E VRM Class I or II

Nominated ACEC	Alternative B ACEC (acres)	Alternative C ACEC (acres)	Alternative B ACEC overlap with Alternative E VRM Classes I and II (acres)	Alternative B ACEC overlap with Alternative E VRM Class I or II (%)
Alvey Wash	29,935	0	23,681	79%
Bulldog Bench	361	0	117	32%

Nominated ACEC	Alternative B ACEC (acres)	Alternative C ACEC (acres)	Alternative B ACEC overlap with Alternative E VRM Classes I and II (acres)	Alternative B ACEC overlap with Alternative E VRM Class I or II (%)
Butler Valley	15,780	0	11,604	74%
Circle Cliffs	26,706	26,706	968	4%
Cockscomb East	42,100	32,684	22,637	54%
Cockscomb West	40,475	40,462	12,898	32%
Collet Top	9,218	0	1,186	13%
Henderson/Pardner	12,259	0	12,165	99%
Hole-in-the-Rock Trail	60,772	0	45,798	75%
Paria River	180	0	180	100%
Scorpion Flat/Dry Fork	30,691	0	30,691	100%
Straight Cliffs/ Fiftymile Bench	21,357	12,270	14,515	68%
Tibbet Head	19,079	18,874	204	1%
Wahweap Hoodoos	130	0	130	100%

Source: BLM 2018f
Note: No ACECs are designated in alternatives D and E. VRM classes are the same for alternatives D and E.
ACEC – Area of Critical Environmental Concern, VRM – Visual Resource Management

Authorization of future ROWs would result in surface-disturbing activities that could cause adverse impacts on historic/cultural, paleontological, geologic, scenic, and natural R&I values. Under Alternative E, future ROWs would be excluded and avoided in potential ACECs as shown in Table 3.16-3, providing protection to R&I values. Maps 35 through 39 depict ROW avoidance and exclusion areas by alternative.

Table 3.16-3. Potential ACEC Overlap with Alternative E ROW Exclusion and Avoidance Areas

Nominated ACEC	Alternative B ACEC (acres)	Alternative C ACEC (acres)	Alternative B ACEC overlap with Alternative E ROW Avoidance (acres)	Alternative B ACEC overlap with Alternative E ROW Exclusion (acres)	Alternative B ACEC overlap with Alternative E ROW Exclusion or Avoidance Areas (%)
Alvey Wash	29,935	0	5,827	15,227	70%
Bulldog Bench	361	0	361	0	100%
Butler Valley	15,780	0	15,732	48	100%
Circle Cliffs	26,706	26,706	20,802	0	78%
Cockscomb East	42,100	32,683	11,479	9,416	100%
Cockscomb West	40,475	40,462	15,550	13	38%
Collet Top	9,218	0	2,024	1,012	33%
Henderson/ Pardner	12,259	0	1,858	10,401	100%

Nominated ACEC	Alternative B ACEC (acres)	Alternative C ACEC (acres)	Alternative B ACEC overlap with Alternative E ROW Avoidance (acres)	Alternative B ACEC overlap with Alternative E ROW Exclusion (acres)	Alternative B ACEC overlap with Alternative E ROW Exclusion or Avoidance Areas (%)
Hole-in-the-Rock Trail	60,772	0	1,298	5,760	12%
Paria River	180	0	27	153	100%
Scorpion Flat/ Dry Fork	30,691	0	447	27,894	92%
Straight Cliffs/ Fiftymile Bench	21,357	12,270	6,516	1,035	35%
Tibbet Head	19,079	18,874	2,243	204	13%
Wahweap Hoodoos	130	0	0	130	100%

Source: BLM 2018f
Note: No ACECs are designated in alternatives D and E. ROW avoidance and exclusion areas are the same for alternatives D and E.
ACEC – Area of Critical Environmental Concern, ROW – right-of-way, VRM – Visual Resource Management

Closing areas to OHV use or limiting OHV uses to existing, designated routes affords protection to R&I values by confining motorized uses to existing disturbances and potentially reducing unauthorized route proliferation that could damage historic/cultural, paleontological, and geologic R&I values, and cause new visual and habitat fragmentation that could degrade scenic and natural R&I values. Additionally, 43 CFR 8341.2 provides that where considerable adverse effects are occurring, the authorized officer can close the areas affected by the types of vehicles causing the adverse effects. In general, under Alternative A, travel and transportation is managed consistent with the current transportation route map (Map 79) and any ongoing impacts on R&I values would continue. Alternative B closes all WSAs and lands with wilderness characteristics, including portions or all of the designated ACECs, to OHV and mechanized use, reducing the potential for adverse effects on R&I values (Map 80). Under alternatives C, D, and E, OHV and mechanized travel is limited for all potential ACECs except Alvey Wash ACEC and Butler Valley ACEC (Alternative C only) (Maps 81 through 83). Where travel is limited, effects on R&I values would be similar to those of Alternative A. Alternative D would manage the Little Desert RMZ as OHV open, which could result in impacts on historic/cultural R&I values in portions of the potential Alvey Wash ACEC that overlap the Little Desert RMZ. When compared to Alternative D, Alternative E would reduce potential impacts from OHV travel on cultural R&I values in the potential Alvey Wash ACEC by managing the entirety of the Little Desert RMZ as OHV limited. Refer to Section 3.15, *Travel and Transportation Management*, for additional information on travel management under the alternatives.

Under all alternatives, a variety of laws, regulations, and policies as identified in Appendix F, *Laws, Regulations, Policies, and Guidance,* would reduce the potential for adverse impacts and afford protection to cultural, paleontological, and natural process R&I values such as the Paleontological Resources Preservation Act, the NHPA, and the ESA.

Application of BMPs identified in Appendix G, *Best Management Practices*, and Appendix H, *Stipulations and Exceptions, Modifications, and Waivers*, would avoid, minimize, and mitigate the potential for adverse impacts on historic/cultural, paleontological, geologic, scenic, and

natural R&I values from surface-disturbing activities associated with future implementation-level decisions and unauthorized/unpermitted actions. For example, BMPs and stipulations applicable to the action alternatives include:

- Avoidance of areas with unique paleontological resources and allows for sampling in areas of ubiquitous fossils.
- Required surveys and monitoring for all surface-disturbing mineral activities in PFYC Class 4 and 5 areas.
- Relocation or modification of projects to avoid special status species or their habitat.
- Maintenance and/or enhancement of riparian areas through project design features and/or stipulations that protect riparian resources.
- A prohibition on new recreational facilities and trails, and other projects in riparian areas wherever possible.

Effects on R&I Values by ACEC

Effects on historic/cultural, paleontological, scenic, geologic, and natural values by ACEC from the potential designation and overlaps with other special designations and VRM classes are described below.

Alvey Wash ACEC

Impacts on the potential Alvey Wash ACEC could occur if there were threats of irreparable damage to historic, cultural, paleontological values; or natural process or system values (i.e., impacts on Atwood penstemon). Under all action alternatives, BMPs would be applied (e.g., avoidance of areas found to have unique paleontological resources) and a Paleontological RMP would be prepared for areas with scientifically significant fossils. Under all action alternatives, the Camp Flats portion (6,226 acres or 21 percent) of the potential ACEC would be closed to casual collection, preventing inadvertent loss of scientifically significant fossils. Alternative A does not designate the Alvey Wash ACEC; however, the potential ACEC overlaps with both Primitive and Outback Zones and portions of the Carcass Canyon and Death Ridge WSAs (see Table 3.16-1). These overlapping designations and allocations in combination with the above-described BMPs and stipulations would help protect the identified R&I values without implementing special management. Alternative B designates the potential Alvey Wash ACEC and applies management specifically designed to protect R&I values from the identified potential threats. Alternatives C, D, and E do not designate the potential ACEC. However, portions of the potential ACEC overlap with WSAs and VRM Class I and II, which would provide some protection for R&I values similar to alternatives A and B (see Table 3.16-1 and Table 3.16-2). Alternative E protects the potential ACEC's R&I values with management that restricts surface-disturbing activities or confines them to specified areas, such as ROW avoidance and exclusion areas (see Table 3.16-3); limits OHV and mechanized use to designated routes, reducing cross-country travel; and closes areas to mineral materials disposal (15,175 acres or 50 percent). Overlapping protective management and the application of BMPs and stipulations would afford some protection of R&I values from irreparable damage under alternatives C, D, and E.

Alternative D designates the Little Desert RMZ as open to OHV (2,528 acres or 8 percent) and alternatives C and E designate an OHV open area in the Little Desert RMZ (116 acres or less than 1 percent) of the potential ACEC. Open OHV use can contribute to the persistence of

existing surface disturbances or the creation of new surface disturbances that could affect the ACEC's R&I values, such as cultural resources and sensitive plants, through trampling, increased rates of erosion, or damage and vandalism to cultural resources by increased vehicle use and human presence. Providing an area for those seeking this type of activity that the BLM has determined does not have R&I values may indirectly help avoid instances of illegal cross-country OHV travel in other portions of ACEC closed or limited OHV areas.

Bulldog Bench ACEC

Impacts on the potential Bulldog Bench ACEC could occur if there were threats of irreparable damage to paleontological values from destruction due to ground-disturbing actions or collection of paleontological materials. Under all alternatives, BMPs would be applied (e.g., avoidance of areas found to have unique paleontological resources) and a Paleontological RMP would be prepared for areas with scientifically significant fossils. Alternative A does not designate the Bulldog Bench ACEC; however, the potential ACEC overlaps with Outback Zones. This overlapping designation would help protect the identified R&I values from irreparable damage. Alternative B designates the Bulldog Bench ACEC and applies management to protect R&I values from potential threats. Alternatives C, D, and E do not designate the potential Bulldog Bench ACEC; however, other management under these alternatives, as described under *General Impacts on R&I Values,* would help protect the R&I values from irreparable damage. Under Alternative E, support of the potential ACEC's R&I values is provided by VRM Class II (Table 3.16-2) or designation of ROW avoidance areas (see Table 3.16-3), and by limiting OHV and mechanized use to designated routes. Overlapping allocations, in combination with BMPs and stipulations, would afford some protection of R&I values from irreparable damage under alternatives C, D, and E.

Butler Valley ACEC

Impacts on the potential Butler Valley ACEC could occur if there were threats of irreparable damage to scenic values, including visual intrusions, vegetation treatments, or natural process or system values (impacts on Kodachrome bladderpod). Alternative A does not designate the potential Butler Valley ACEC; however, the potential ACEC area would overlap with a designated Outback Zone, which would protect the identified R&I values from irreparable damage. Alternative B designates the Butler Valley ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternatives B and C would protect the identified scenic resources by managing the area as VRM Class II, which would provide some protection from visually intrusive uses. Additionally, Alternative B would prohibit vegetation treatments in known suitable habitat for special status species plants and would conduct inventories and research to identify and document habitat and populations of all sensitive plants within the ACEC. Alternatives C, D, and E do not designate the potential ACEC. Alternative C manages the potential ACEC as a ROW exclusion area and alternatives D and E manage the area as a ROW avoidance and exclusion area, limiting the potential for visual intrusions and fragmentation (Table 3.16-3). Alternatives D and E also limit OHV and mechanized use to designated routes, apply VRM Class II (Table 3.16-2) to more than half of the potential ACEC, and apply restrictive management for minerals and travel to suitable wild river corridors. Overlapping allocations, in combination with BMPs and stipulations, would afford some protection of R&I values from irreparable damage under alternatives C, D, and E.

Circle Cliffs ACEC

Impacts on the potential Circle Cliffs ACEC could occur if there were threats of irreparable damage to historic, cultural, scenic (including visual intrusions), and fish and wildlife (i.e., MSO) values. Alternative A does not designate the potential Circle Cliffs ACEC; however, the potential ACEC area would overlap with both Primitive and Outback Zones, which would help protect the identified R&I values from irreparable damage. Alternative B designates the Circle Cliffs ACEC and management would be sufficient to protect R&I values from potential threats. Alternative B would protect the identified scenic resources by managing the area as VRM Class II, which would provide protection from visually intrusive uses. Additionally, Alternative B would plan and complete NHPA Section 110 inventories and site documentation for recreational use and cattle congregation, promote archaeological research, work with SRP holders and Site Stewards to increase monitoring of archaeological sites, and close the area to mineral materials and locatable mineral entry. Alternative C designates the Circle Cliffs ACEC with similar management as Alternative B, with the exception that CSU stipulations would be applied for mineral leasing to locate mineral facilities outside of the viewshed (where setting is a component of a site's eligibility). Alternatives E does not designate the potential Circle Cliffs ACEC; however, a portion of the area is managed as VRM Class II (Table 3.16-2). Alternative E further supports the potential ACEC's R&I values by restricting surface-disturbing activities or confining them to specified areas, such as designation of ROW avoidance areas (Table 3.16-3), and limiting OHV and mechanized use to designated routes. These overlapping allocations in combination with the above-described BMPs and stipulations would afford some protection of the R&I values from irreparable damage under alternatives D and E.

Cockscomb East ACEC

Impacts on the potential Cockscomb East ACEC could occur if there were threats of irreparable damage to paleontological, scenic, geologic, and natural process or system values, including visual intrusions, vegetation treatments, and collection of sensitive plants. Under all alternatives, the operations or design of authorized uses or activities would avoid areas found to have unique paleontological resources and include preparation of a Paleontological RMP (Appendix H, *Stipulations and Exceptions, Modifications, and Waivers*). Alternative A does not designate the potential ACEC; however, the potential ACEC area would overlap a designated Primitive Zone and Cockscomb WSA and Wahweap WSA (Table 3.16-1), which would protect the identified R&I values from irreparable damage. Alternative B designates the Cockscomb East ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B would protect the identified paleontological, scenic, geologic, and natural process or system values by managing all areas within the Cockscomb East ACEC that are located outside of the WSAs as VRM Class II, which would provide protection from visually intrusive uses. Additionally, Alternative B prohibits the collection of BLM or State sensitive plants; requires inventories and annual monitoring for paleontological resources; conducts research, inventories, and monitoring for all endemic and sensitive plants; prohibits the casual collection of fossils or other paleontological materials; and prohibits vegetation treatments in known suitable habitat for special status plants. Alternative C designates the portions of the ACEC that are outside of the WSA with similar management as Alternative B, with the exception that vegetation treatments are allowed in known suitable habitat for special status plants. Alternatives E does not designate the potential ACEC. However, portions of the potential Cockscomb East ACEC would overlap with portions of the Cockscomb WSA and

Wahweap WSA, and portions of the potential ACEC that do not overlap with the WSAs would be managed as VRM Class I and II (Table 3.16-2). Under alternatives D and E, support of the potential ACEC's R&I values is also provided by designating ROW avoidance and exclusion areas (Table 3.16-3), limiting OHV and mechanized use to designated routes, closing areas to mineral materials disposal (9,413 acres or 22 percent), and managing the suitable recreation corridor as NSO for mineral leasing (2,471 acres or 6 percent). These overlapping designations and allocations, in combination with the above-described BMPs and stipulations, would protect the R&I values under alternatives D and E without implementing special management.

Cockscomb West ACEC

Impacts on the potential Cockscomb West ACEC could occur if there were threats of irreparable damage to cultural, scenic, and natural process or system values, including visual intrusions, vegetation treatments, OHV use, collection of sensitive plants, and vehicular traffic. Under all alternatives, the operations or design of authorized uses or activities would avoid areas found to have unique paleontological resources and include preparation of a Paleontological RMP (Appendix H, *Stipulations and Exceptions, Modifications, and Waivers*). Alternative A does not designate the potential ACEC; however, the potential ACEC area would overlap a designated Outback Zone, which would help protect the identified R&I values from irreparable damage. Alternative B designates the Cockscomb West ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B protects the identified cultural, scenic, and natural process or system values by managing all areas within the Cockscomb West ACEC that are located outside of the WSAs as VRM Class II, which would provide some protection from visually intrusive uses (Table 3.16-1). Additionally, Alternative B closes the area to mineral materials and locatable mineral entry, prohibits the collection of BLM and State sensitive plants, increases monitoring of known archaeological sites, and closes WSAs to vehicular or OHV use. Alternative C designates the portions of Cockscomb West ACEC that are outside of the WSA with similar management as Alternative B, with the exception that oil and gas leasing is allowed subject to moderate constraints, mineral facilities would be located outside of the viewshed (where setting is a component of a site's eligibility), and travel is limited to designated routes. Alternatives D and E do not designate the potential ACEC, and support of the potential ACEC's R&I values is provided by management that restricts surface-disturbing activities or confines them to specified areas, such as management as VRM Class I and II (Table 3.16-2); designates ROW avoidance and exclusion areas (Table 3.16-2); and limits OHV and mechanized use to designated routes. These overlapping designations and allocations, in combination with the above-described BMPs and stipulations, would protect the R&I values under alternatives D and E without implementing special management.

Collet Top ACEC

Impacts on the potential Collet Top ACEC could occur if there were threats of irreparable damage to scenic values, including visual intrusions; cultural resources; and natural process or systems (impacts on Atwood's penstemon). Alternative A does not designate the potential Collet Top ACEC; however, the potential ACEC area overlaps with both Primitive and Outback Zones and Burning Hills and Fiftymile Mountain WSAs, which would help protect the identified R&I values from irreparable damage (Table 3.16-1). Alternative B designates the Collet Top ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B would manage all areas within the Collet Top ACEC that are located outside the WSAs as VRM Class II, which would provide some protection from visually intrusive

uses. Alternatives C, D, and E do not designate the potential ACEC. However, under alternatives C, D, and E, northern portions and the perimeter of the potential ACEC overlap with the Burning Hills and Fiftymile Mountain WSAs. Alternatives D and E protect R&I values through management that restricts surface-disturbing activities, such as management as VRM Class I and II (Table 3.16-2); designates ROW avoidance and exclusion areas (Table 3.16-3); limits OHV and mechanized use to designated routes; and closes areas to mineral materials disposal (1,013 acres or 11 percent). These overlapping designations and allocations, in combination with BMPs and stipulations, would protect R&I values under alternatives C, D, and E without implementing special management.

Henderson/Pardner ACEC

Impacts on the potential Henderson/Pardner ACEC could occur if there were threats of irreparable damage to paleontological and scenic values, including visual intrusions. Under all alternatives, BMPs would be applied (e.g., avoidance of areas found to have unique paleontological resources) and a Paleontological RMP would be prepared for areas with scientifically significant fossils. Alternative A does not designate the potential ACEC; however, the potential ACEC area overlaps with both Primitive and Outback Zones and The Blues WSA, which would help protect the identified R&I values from irreparable damage (Table 3.16-1). Alternative B designates the Henderson/Pardner ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B manages all areas within the potential Henderson/Pardner ACEC that are located outside the WSAs as VRM Class II, which would provide some protection from visually intrusive uses.

Alternatives C, D, and E do not designate the potential ACEC; however, a portion of the potential ACEC overlaps with The Blues WSA. Additionally, the majority of the area outside of the WSA under alternatives C, D, and E is managed as VRM Class II (Table 3.16-2). Alternative E protects the potential ACEC's R&I values with management that restricts surface-disturbing activities, such as management of ROW avoidance and exclusion areas (Table 3.16-3); limits OHV and mechanized use to designated routes; and closes areas to mineral materials disposal (11,040 acres or 90 percent). These overlapping designations and allocations, in combination with BMPs and stipulations, would protect R&I values under alternatives C, D, and E without implementing special management.

Hole-in-the-Rock Trail ACEC

Impacts on the potential Hole-in-the-Rock Trail ACEC could occur if there were threats of irreparable damage to cultural values, including mineral development, and to natural process or system values (impacts on Barneby milkvetch). Alternative A does not designate the potential ACEC; however, the potential ACEC area overlaps with both Primitive and Outback Zones and Devils Garden ISA and the Scorpion WSA, which would help protect the identified R&I values from irreparable damage (Table 3.16-1). Alternative B designates the Hole-in-the-Rock Trail ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B includes management to work with SRP holders and Site Stewards to monitor and document known archaeological sites, develop a management and recreation trail plan, close areas to exclusive mineral materials pits, and allow oil and gas leasing subject to major constraints. Alternatives C, D, and E do not designate the potential ACEC; however, a portion of the potential ACEC overlaps with the Devils Garden ISA and the Scorpion WSA. Additionally, the majority of areas outside of the WSAs under alternatives C, D,

and E are managed as VRM Class II (Table 3.16-2). Alternative E protects the potential ACEC's R&I values with management that restricts surface-disturbing activities, such as management of ROW avoidance and exclusion areas (Table 3.16-3); limits OHV and mechanized use to designated routes; and closes areas to mineral materials disposal (4,112 acres or 7 percent). These overlapping designations, in combination with BMPs and stipulations, would protect R&I values under alternatives C, D, and E without implementing special management.

Paria River ACEC

Impacts on the potential Paria River ACEC could occur if there were threats of irreparable damage to historic, prehistoric, cultural, scenic, and natural process or system values, including visual intrusions and vehicular traffic. Alternative A does not designate the potential ACEC; however, the potential ACEC area overlaps with the Primitive Zone and Paria-Hackberry WSA, which would protect the identified R&I values from irreparable damage (Table 3.16-1). Alternative B designates the Paria River ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B manages the small portion of the potential ACEC located outside the WSA as VRM Class II, which would provide some protection from visually intrusive uses. Additionally, Alternative B includes management to work with SRP holders and Site Stewards to increase monitoring of known archaeological sites, as well as manage vehicular traffic to stay on designated routes and prohibit vehicular access to side canyons. Alternatives C, D, and E do not designate the potential ACEC; however, a portion of the potential ACEC overlaps with the Paria-Hackberry WSA and the remainder of the area is managed as VRM Class II (Table 3.16-2). Alternative E protects the potential ACEC's R&I values with management that restricts surface-disturbing activities, such as management of ROW avoidance and exclusion areas (Table 3.16-3); limits OHV and mechanized use to designated routes; and closes areas to mineral materials disposal (172 acres or 96 percent). In addition, alternatives D and E apply restrictive management for minerals and travel to suitable wild river corridors (142 acres or 79 percent) and to the overlapping suitable recreational river corridor. These overlapping designations and allocations, in combination with BMPs and stipulations, would protect R&I values under alternatives C, D, and E without implementing special management.

Scorpion Flat/Dry Fork ACEC

Impacts on the potential Scorpion Flat/Dry Fork ACEC could occur if there were threats of irreparable damage to scenic values, including visual intrusions. Alternative A does not designate the potential ACEC; however, the potential ACEC area would overlap with both Primitive and Outback Zones and Scorpion WSA and a small portion of the Escalante Canyons Tract 5 ISA, which would help protect the identified R&I values from irreparable damage (Table 3.16-1). Alternative B designates the Scorpion Flat/Dry Fork ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B manages all areas within the Scorpion Flat/Dry Fork ACEC that are located outside the WSA as VRM Class II, which would provide some protection from visually intrusive uses. Alternatives C, D, and E do not designate the potential ACEC; however, portions of the potential ACEC overlap with the Scorpion WSA and a small portion of the Escalante Canyons Tract 5 ISA, and the remainder of the area is managed as VRM Class II (Table 3.16-2). Alternative E protects the potential ACEC's R&I values with management that restricts surface-disturbing activities, such as management of ROW avoidance and exclusion areas (Table 3.16-3); limits OHV and mechanized use to designated routes; and closes areas to mineral materials disposal (23,632

acres or 77 percent). These overlapping designations and allocations, in combination with the above-described BMPs and stipulations, would protect R&I values under alternatives C, D, and E without implementing special management.

Straight Cliffs/Fiftymile Bench ACEC

Impacts on the potential Straight Cliffs/Fiftymile Bench ACEC could occur if there were threats of irreparable damage to cultural and scenic values, including visual intrusions and mineral development. Alternative A does not designate the potential ACEC; however, the potential ACEC area overlaps with both Primitive and Outback Zones and Carcass Canyon WSA (Table 3.16-1), which would help protect the identified R&I values from irreparable damage. Alternative B designates the potential Straight Cliffs/Fiftymile Bench ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternatives B and C manage all areas within the potential ACEC that are located outside the Carcass Canyon WSA as VRM Class II, which would provide some protection from visually intrusive uses. Additionally, Alternative B would develop an RMP and allow oil and gas leasing subject to major constraints. Alternative C designates the southern portion of the Straight Cliffs/Fiftymile Bench ACEC that is located outside of the WSA with similar management as Alternative B, with the exception that oil and gas leasing is allowed subject to moderate constraints and mineral facilities would be located outside of the viewshed (where setting is a component of a site's eligibility). The northern portion of the Straight Cliffs/Fiftymile Bench potential ACEC that overlaps the WSA is not included in the Alternative C ACEC designation. Alternatives D and E do not designate the potential ACEC, but manage a portion of the potential ACEC as a WSA, manage a portion as VRM Class I and II (Table 3.16-2), designate ROW avoidance/exclusion areas (Table 3.16-3), and limit OHV and mechanized use to designated routes. These overlapping designations and allocations, in combination with BMPs and stipulations, would protect R&I values under alternatives C, D, and E without implementing special management.

Tibbet Head ACEC

Impacts on the potential Tibbet Head ACEC could occur if there were threats of irreparable damage to paleontological and natural process or system values. Under all alternatives, BMPs would be applied (e.g., avoidance of areas found to have unique paleontological resources) and a Paleontological RMP would be prepared for areas with scientifically significant fossils. Under all action alternatives, the Tibbet Head portion (18,364 acres or 96 percent) of the potential ACEC would be closed to casual collection. Alternative A does not designate the potential ACEC; however, the potential ACEC area overlaps with both Primitive and Outback Zones and Wahweap WSA, which would protect the identified R&I values from irreparable damage (Table 3.16-1). Alternatives B and C designate the Tibbet Head ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternatives B and C require annual monitoring for impacts on paleontological resources, and require inventories of all paleontological resources prior to surface-disturbing activities. Alternatives D and E do not designate the potential ACEC; however, portions of the potential ACEC overlap with the Wahweap WSA, are designated as ROW avoidance and exclusion areas (Table 3.16-3), and limit OHV and mechanized use to designated routes. These overlapping designations and allocations, in combination with BMPs and stipulations, would protect R&I values under alternatives D and E without implementing special management.

Wahweap Hoodoos ACEC

Impacts on the potential Wahweap Hoodoos ACEC could occur if there were threats of irreparable damage to natural processes or systems (impacts on hoodoos), including impacts from mineral development and rock climbing. Under all alternatives, the Wahweap WSA overlaps 100 percent of the Wahweap Hoodoos ACEC and provides protection from mineral development, ROW (exclusion area), and surface-disturbing activities (Table 3.16-1). Alternative A does not designate the potential ACEC; however, the potential ACEC area also overlaps with a designated Primitive Zone, which would protect the identified R&I values from irreparable damage. Alternative B designates the Wahweap Hoodoos ACEC and the proposed management would be sufficient to protect R&I values from potential threats. Alternative B would avoid mineral materials disposal, as well as prohibit rock climbing within 100 meters of any hoodoo formation. Alternatives C, D, and E do not designate the potential ACEC; however, these alternatives apply VRM Class I and II (Table 3.16-2) to support the potential ACEC's R&I values and reduce surface disturbance. These overlapping designations and allocations, in combination with the above-described BMPs and stipulations, would protect R&I values from under alternatives C, D, and E without implementing special management.

Summary of Effects on R&I Values

Alternative B would best protect R&I values in all potential ACECs. Alternative B designates all potential ACECs and would implement special management actions to protect and prevent all R&I values from irreparable damage. Alternative C designates five potential ACECs whose R&I values would be protected due to special management associated with the ACEC. Alternatives A, C, D, and E generally provide less protection for R&I values than Alternative B in the areas where potential ACECs have not been designated.

R&I values for all potential ACECs, except Bulldog Bench and Circle Cliffs, are protected across alternatives as a result of overlap with existing WSAs (Table 3.16-1). WSAs provide increased protection of R&I values because they are managed to ensure the non-impairment of wilderness character, which includes VRM Class I, providing the public with important information regarding appropriate activities in WSAs, monitoring public activities, and maintaining acceptable route designations and range developments. As described in detail above, further protection of R&I values from irreparable damage would be provided through the application of more restrictive VRM classes, ROW avoidance and exclusion areas, travel decisions that limit or close areas to OHV or mechanized travel, closures to mineral development, other special designations, the BMPs identified in Appendix G, *Best Management Practices*, and stipulations in Appendix H, *Stipulations and Exceptions, Modifications, and Waivers.*

3.16.2.3 Cumulative Effects

The cumulative impacts analysis area for ACECs is the Planning Area. This area encompasses the boundaries of ACECs and other locations in the Planning Area that could be cumulatively affected by ACEC management decisions in combination with other past, present, and reasonably foreseeable actions. Cumulative impacts from the implementation of other resource decisions within and outside of the boundaries of potential ACECs would include any form of surface disturbance within or adjacent to a potential ACEC or allowable uses that would be counterproductive to the appropriate management of an ACEC, such as increased

recreational activity. Past, present, and reasonably foreseeable projects that may contribute to cumulative impacts include ROW development (e.g., Lake Powell pipeline), mineral development in the Upper Valley Field and potential development of the Alton Coal Tract, and other projects identified in Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable* Actions, that could affect R&I values in KEPA.

Based on the nature of the R&I values associated with the potential ACECs, impacts tend to occur quickly but recover slowly, and could be irreparable in the case of some impacts on cultural and paleontological sites. As such, any impact would result in a cumulative increase in the potential for irreparable damage to R&I values. Impacts would be avoided or minimized in potential ACEC areas that overlap with other special designations and VRM Class I and II areas. Alternative B would result in the lowest potential for cumulative impacts resulting in irreparable damage to R&I values because all potential ACECs would be designated and would have special management to protect their R&I values. The potential for irreparable damage to R&I values would be increased under Alternative C (which designates five ACECs). The potential for such damage to R&I values within potential ACECs would be greatest under alternatives D and E, which designate no ACECs and increase the potential for surface-disturbing activities compared to the other alternatives.

3.17 National Historic Trails

3.17.1 Affected Environment

The analysis area for congressionally designated National Historic Trails (NHTs) is the route on public lands through the Planning Area (36 miles) and the associated trail setting.

Thirty-six miles of the Armijo Route, a segment of the OSNHT, are found within the Planning Area (Map 86) (BLM 2018b; BLM and NPS 2017). Twenty-four miles of the OSNHT along the Armijo Route's Box of the Paria segment is recognized as a "high potential route segment," a term used in the National Trails System Act for segments of a trail that afford high-quality recreation experiences along a portion of the route having greater-than-average scenic values or affording an opportunity to share vicariously the experience of the original users of a historic route (AECOM 2012; 16 U.S.C. 1241 et seq.). The Box of the Paria high potential segment's resources, qualities, values, associated settings, and Federal protection components are primarily encompassed by relatively unaltered terrain and outstanding scenic setting (BLM 2018b; AECOM 2012). To the east and west the remaining 12 miles of the OSNHT cross and parallel Highway 89 and electrical distribution lines in KEPA.

The trail is jointly administered by the BLM and NPS. The BLM and NPS use the Comprehensive Administrative Strategy (BLM and NPS 2017), their respective trail administration manuals, and land use plans for their guidance in trail administration. Section 7(c) of the National Trails System Act outlines appropriate recreational uses, including OHV and mechanized travel, along NHTs and states that "reasonable efforts shall be made to provide sufficient access opportunities to such trails. Other uses along the trail, which will not substantially interfere with the nature and purposes of the trail, may be permitted by the Secretary charged with the administration of the trail" (16 U.S.C. 1241 et seq.). Recreational facilities and interpretive sites along the OSNHT in the Planning Area include the Paria Box Trailhead and Paria Wayside/Old Spanish Trail site. An NTMC, as defined by BLM Manual 6280, has not been established to date (BLM 1999a, 2012e). Refer to Chapter 2, Section 2.4.2, *National Historic Trails* (page 122), in the AMS (BLM 2018b) for more information on the OSNHT.

3.17.2 Environmental Consequences

3.17.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on the OSNHT resources and NTMC from implementation of the management alternatives. Map 86 depicts the OSNHT and management corridors under the alternatives.

Impacts would primarily result from the following impact mechanisms:

- Surface-disturbing activities, including development, that intrudes on the historic setting, character, or recreational quality of the OSNHT
- Transportation/access and recreational use
- Unpermitted and/or unauthorized removal, vandalism, alteration, damage, or destruction of cultural resources (refer to Section 3.2, *Cultural Resources*, for this impact discussion)

Effects on the OSNHT are generally described in a qualitative fashion, with acreages and management corridor widths provided where appropriate to draw distinctions among the alternatives. In addition to those found in Section 3.18.2.1, *Methods and Assumptions*, for scenic routes that apply to the OSNHT, this impact analysis is based on the following assumptions:

- Proposed actions involving surface-disturbing activities will be reviewed using the process outlined in BLM Manual 6280, and, when historic properties are involved, through the NHPA Section 106 review process.
- The 24-mile Box of the Paria high potential segment (and associated Federal protection components) is more sensitive to impacts than the 12 miles near Highway 89 that have not been inventoried and are partially compromised by transportation and utilities.
- Regardless of the BLM management, travel off designated or existing routes and the creation of social trails has occurred and will likely continue, creating adverse effects within the setting of the NHT. Unpermitted and unauthorized off-trail hiking, off-road motor vehicle use, and OHV use create new trails and roads, which can damage or displace surface artifacts and features. Short-term, indirect, adverse impacts associated with unauthorized and unmonitored activities include increased and accelerated erosion and soil degradation, as well as increased artifact collection and human trampling. Long-term, indirect, adverse impacts could result from the loss, destruction, or vandalism of resources through prolonged use of unauthorized trails, roads, and camping.
- TMPs will be prepared after the completion of the RMPs and will direct route designations consistent with NTMC goals, objectives, and actions. Public input and comments on the route network within NTMC will be considered during the TMP planning process.

3.17.2.2 Direct and Indirect Effects

This section describes the potential direct, indirect, and cumulative impacts on NHTs from resources or resource uses within the Planning Area. Adverse effects can result from surface-disturbing activities caused by mineral resource development and other ground-disturbing activities, as these activities can cause damage to or destruction of significant Federal protection components and cultural resources associated with the OSNHT. Impacts from livestock grazing and increased human presence for recreational or job-related purposes are

the same as those described for cultural resources in Section 3.2, *Cultural Resources*, and include disturbance from trampling, vandalism, looting, and casual artifact collection.

Adverse effects on the OSNHT and NTMC could also include short- and long-term loss of opportunities for high-quality recreation experiences, scenic values, and vicarious historical experiences from human-induced surface disturbance and visual resource contrasts. These direct and indirect effects would result from management actions for lands and realty, mineral development in KEPA, renewable energy development in KEPA, and motorized or mechanized travel. Conversely, management designed to improve landscapes and protect cultural resources, such as vegetation treatments, fish and wildlife habitat management, and soils and watershed enhancement activities, could cause surface disturbance and vegetation removal in the short term, but would result in long-term, direct and indirect, beneficial impacts on NHT resources. Management that limits potential adverse effects on the OSNHT and NTMC by instituting constraints on resource uses include special designations, certain recreation management areas that limit surface-disturbing activities, and lands with wilderness characteristics specifically managed to protect and preserve their wilderness characteristics.

Impacts from Surface- and Setting-Disturbing Activities

Long-term, direct, adverse impacts would occur due to the permanent loss of trail traces, associated cultural resources, opportunities for vicarious experiences, and primitive setting and high scenic values caused by the development of permanent features (such as utility ROWs, renewable energy facilities, mineral leases, and recreation sites) and certain types of surface-disturbing activities, including vegetation treatments and fire management activities. Indirect, adverse impacts associated with these latter types of activities may include erosion from soil disturbances and accidental damage from human trampling or vehicle use and machinery. For example, vegetation removal on or within the watershed of the OSNHT could temporarily increase the erosion of the trail traces.

Management that preserves landscape character within the NTMC—including establishing ROW avoidance and exclusion areas, managing areas as VRM Class I or II, and applying surface-use stipulations to mineral and renewable energy development—would reduce the potential for adverse impacts. Furthermore, where the OSNHT and/or NTMC overlap special designations and lands with wilderness characteristics specifically managed to protect and preserve their wilderness characteristics, the potential for adverse effects on scenic qualities would be reduced, as these areas preclude or restrict surface-disturbing activities. Alternative B includes the most acres of protective restrictions due to special designations and lands with wilderness characteristics specifically managed to protect and preserve their wilderness characteristics, which would indirectly benefit NHT resources compared to alternatives A, C, D, and E. The Cockscomb WSA, which is designated under all alternatives, would protect high-quality recreation experiences and scenic values along a portion of the OSNHT and NTMC through limits on surface disturbances.

The alternatives establish varying widths for the NTMC (Table 3.17-1, Map 86) and impose varying degrees of restriction on activities that could adversely affect the recreation experiences and scenic values in the corridors. Alternative B establishes the largest NTMC (3 miles on either side of the OSNHT centerline) and generally prohibits all new surface-disturbing activities within the NTMC, but does allow consideration of discretionary uses that would be compatible with the protection of the purpose and nature, resources, qualities, values, and

settings of the OSNHT, as determined during project-specific permitting. Limitations on surface-disturbing activities under alternatives A and C would be less restrictive and provide less protection from adverse effects than Alternative B, but more than alternatives D and E. Adverse impacts from alternatives A, C, and D would be most pronounced on the Box of the Paria high potential segment, as the smaller NTMC widths under these alternatives may not limit effects on the larger NHT viewshed outside of the slot canyon portion (Map 86). Alternative D establishes the shortest (24 miles) and narrowest NTMC (300 feet on either side of the OSNHT centerline or within the viewshed, whichever is less) and would allow discretionary uses beyond the NTMC that are compatible with the nature, purpose, and settings of the Box of the Paria high potential segment. Alternatives B, C, and D may reduce potential impacts on the viewshed of the OSNHT, as these alternatives manage the high-potential sites and segments of the OSNHT NTMC as VRM Class II. However, for all action alternatives, including Alternative E, any use within the high-potential sites and segments of the OSNHT NTMC would have to be compatible with the protection of the purpose and nature, resources, qualities, values, and setting of the OSNHT. Evaluation of compatible uses would consider audible and atmospheric effects of future project-specific uses that exceed current levels within the NTMC. Alternative E establishes a wider NTMC corridor than Alternative D (0.5 mile on either side of the OSNHT centerline or within the viewshed, whichever is less), which may afford additional protection to the OSNHT and its values compared to Alternative D, as the wider corridor increases the total acreage of the OSNHT NTMC managed as VRM Class I and II compared to alternatives C and D (Table 3.17-2). In general, impacts from surface-disturbing activities that could adversely affect the recreation experiences and scenic values within the corridors would be similar across the GSENM units due to similar management in the three units.

Additionally, Alternative B manages a larger portion of the NTMC under VRM Class I and II objectives, which would limit activities that could create new visual contrast and degrade the OSNHT's scenic values. As shown in Table 3.17-2, Alternative B and Alternative C (respectively) have the largest NTMC managed as VRM Classes I and II. Alternative A does not establish an NTMC, but includes some protective management for the NHT's setting through application of VRM Class objectives (Table 3.17-2).

Table 3.17-1. OSNHT NTMC by Alternative and Management Unit

Alternative	Grand Staircase Unit	Kaiparowits Unit	KEPA	Total (acres)
Alternative A: No OSNHT NTMC	N/A	N/A	N/A	N/A
Alternative B: 36-mile OSNHT NTMC up to 3 miles*	12,878	2,113	61,256	76,247
Alternative C: 36-mile OSNHT NTMC up to 0.5 mile*	2,949	409	17,879	21,238
Alternative D (Preferred Alternative): 24-mile OSNHT NTMC up to 300 feet*	404	50	1,409	1,863
Alternative E (Proposed Plans): 24-mile OSNHT NTMC up 0.5 mile*	2,949	409	10,843	14,201

Source: BLM 2018f
* Includes a distance on each side of the OSNHT centerline or within the viewshed, whichever is less.
OSNHT – Old Spanish National Historic Trail, NTMC – National Trail Management Corridor, KEPA – Kanab-Escalante Planning Area, N/A –not applicable

Table 3.17-2. Visual Resource Management Classes in the NTMC

Alternative	VRM Class I	VRM Class II	VRM Class III	VRM Class IV	Total (acres)
Alternative A: No OSNHT NTMC; 3 miles for comparison[1]	0	25,777	50,431	0	76,208
Alternative B: OSNHT NTMC up to 3 miles[2]	19,350	56,897	0	0	76,247
Alternative C: OSNHT NTMC up to 0.5 mile[2]	4,090	16,221	924	3	21,238
Alternative D (Preferred Alternative): OSNHT NTMC up to 300 feet*	552	1,311	0	0	1,863
Alternative E (Proposed Plans): OSNHT NTMC up to 0.5 mile*	4,086	6,221	3,821	73	14,201

Source: BLM 2018f
[1] Alternative A does not have an NTMC; however, to provide a basis for comparison in how the setting is currently being managed, this table presents Alternative A VRM Classes within a 3-mile viewshed of the OSNHT.
[2] Includes a distance on each side of the OSNHT centerline or within the viewshed, whichever is less.
NTMC – National Trail Management Corridor, OSNHT – Old Spanish National Historic Trail, VRM – Visual Resource Management
* Includes a distance on each side of the OSNHT centerline or within the viewshed, whichever is less.

Application of cultural resource management, site protection, monitoring, and BMPs identified in Appendix G, *Best Management Practices*, and Appendix J, *Cultural Resources*, would generally reduce the potential for direct and indirect, adverse impacts on NHT resources. For example, potential impacts on NHT resources from visual contrasts within the trail setting could be reduced by conducting a viewshed analysis and consultation to inform appropriate site locations outside of the setting. Adverse impacts on NHT resources resulting from BLM-authorized surface disturbance would also be avoided, minimized, or mitigated during NEPA and NHPA Section 106 compliance processes in accordance with the National Trails System Act.

Impacts from Transportation/Access and Recreational Use

Under all alternatives, long-term opportunities for recreational access to the OSNHT would be available; such access would provide for high-quality recreation experiences for users but could lead to continuing degradation of conditions (e.g., erosion, trampling vandalism, looting, casual artifact collection) along the OSNHT as a result of OHV use and increased human presence. Highway 89 and a congressionally designated utility corridor run adjacent to the OSNHT for approximately 12 miles. The 24-mile Box of the Paria high potential route segment, located outside of the Highway 89 corridor, also has 12 miles of existing BLM-designated open and open/all-terrain vehicle routes. Because Alternative B closes all WSAs and lands with wilderness characteristics specifically managed to protect and preserve their wilderness characteristics to motorized or mechanized use (refer to Section 3.15, *Travel and Transportation Management*), recreational access and the potential for degradation of resource conditions would be reduced where these designations overlap the Box of the Paria segment. Under Alternative C, these WSAs and lands with wilderness characteristics would be managed as areas limited to designated routes. Alternatives D and E do not apply management specifically to protect, preserve, or maintain wilderness characteristics in inventoried lands with wilderness characteristics, but do manage travel in WSAs as limited to designated routes, which could result in indirect, adverse effects from OHV use. However, because there are

relatively few existing primitive routes and ways in the Planning Area WSAs, the effect of travel management decisions allowing OHV travel on designated routes in WSAs would be minimal.

Application of BMPs identified in Appendix G, *Best Management Practices*, would generally reduce the potential for direct and indirect, adverse impacts on NHT resources. For example, public education and/or physical barriers to direct or preclude uses that may cause damage would reduce potential impacts on NHT resources. Providing opportunities for science and research, as well as understanding and interpreting cultural resources, are major goals of all alternatives (refer to Chapter 2). Management actions common to all the alternatives would have beneficial impacts on NHT resources as the BLM facilitates and engages in the research, outreach, and education efforts detailed in Section 2.3.22, *Science and Monument Advisory Committee*.

3.17.2.3 Cumulative Effects

The cumulative impacts analysis area is the OSNHT and associated viewshed up to 15 miles or the visual horizon (whichever is closer). Although views can and do extend beyond 15 miles, the 15-mile distance was chosen because it defines the background distance zone (BLM Manual H-8410-1) and is near the limit of visibility of skylined energy development facilities, such as transmission towers and wind turbines, that may be readily noticeable to casual observers. Beyond that distance, the proposed management actions within the Planning Area would have minimal, if any, contribution to cumulative impacts on the OSNHT.

Past, present, and reasonably foreseeable future actions and conditions within the cumulative impacts analysis area that have affected and would likely have the greatest future effect on the OSNHT include development along Highway 89, ROW development such as the Lake Powell pipeline, energy and mineral development, cross-country and unauthorized OHV use, continued urbanization, and road construction and improvements. Energy development, which depends on a variety of external factors, could have widespread and long-term effects on the OSNHT setting if these projects were to occur within the viewshed.

Alternatives C, D, and E have fewer management actions that would restrict surface disturbance and/or permanent structures and more areas designated as VRM Class III and IV, as compared to alternatives A and B. Alternatives C, D, and E would generally result in incremental adverse effects on the OSNHT on surrounding (non-BLM) lands within the cumulative impacts analysis area. The effects of alternatives C, D, and E, when combined with other land uses and past, present, and reasonably foreseeable future actions, would result in short- and long-term, adverse, cumulative impacts on the OSNHT and its setting. Alternative B would have the potential for fewer adverse effects on the OSNHT and associated viewshed than alternatives A, C, D, and E, because it would implement more management restricting surface disturbance and large-scale permanent structures and more lands designated as VRM Classes I and II. The effects of alternative B, followed by A, when combined with other land uses and past, present, and reasonably foreseeable future actions, would result in the least potential for short- and long-term adverse cumulative impacts on the OSNHT and its setting.

3.18 Scenic Routes

3.18.1 Affected Environment

The analysis area for scenic routes includes one All-American Road that occurs within and adjacent to the Planning Area and six Utah State Scenic Backways that occur within the Planning Area (Map 87).

The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration. The program was developed to help recognize, preserve, and enhance selected roads throughout the United States by designating certain roads as National Scenic Byways or All-American Roads based on their intrinsic qualities (archaeological, cultural, historic, natural, recreational, and scenic). To be designated a National Scenic Byway, a road must possess characteristics of regional significance within at least one of the intrinsic qualities. All-American Roads must possess characteristics of national significance in at least two of the intrinsic qualities. An All-American Road, Scenic Byway 12 (State Route 12), occurs within the Planning Area and is a 124-mile scenic byway. Scenic Byway 12 is one of only 20 All-American Roads in the Nation and the only All-American Road in Utah. No roads designated as National Scenic Byways are present in the Planning Area.

Utah's State Scenic Backways have been designated by official State declaration for their scenic, historic, or recreational qualities, yet are roads that do not generally meet Federal safety standards for safe year-round travel by passenger cars. Backways often require four-wheel-drive vehicles, and road conditions can vary due to such factors as season and weather (BLM 2018b). The seven Utah Scenic Backways within the Planning Area are Burr Trail Scenic Backway, Cottonwood Canyon Road, Johnson Canyon/Alton Amphitheater, HITRR, Paria River Valley Road, and Smoky Mountain Road. Refer to Chapter 2, Section 2.4.4, *Scenic Routes* (pages 124–126), and Appendix 1 (*Maps*), Map 30 (page 242), in the AMS (BLM 2018b) for more information and locations on scenic routes that occur within the Planning Area.

3.18.2 Environmental Consequences

3.18.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on scenic route resources from implementation of the management alternatives. Map 87 depicts scenic routes that would be managed as Backcountry Byways under alternatives B and C.

Potential impacts on scenic routes are assessed by comparing the designation of the VRM class within the viewshed or "seen area" of the scenic route corridor, and by examining how other resources and resource use management actions affect scenic routes. Effects on scenic routes from these impact mechanisms are described in a qualitative fashion.

Impacts on visual resources would primarily result from the following impact mechanisms:

- Potential changes in landscape character or setting from management of other program areas

This analysis uses the following assumptions:

- VRM class objectives apply to all resources. Class objectives would be adhered to through project design, avoidance, or mitigation.

- Visual design considerations will be incorporated into all surface-disturbing projects regardless of size, potential impact, or VRM class.
- Visitors to or residents living near BLM-administered surface lands are sensitive to changes in scenic quality along scenic byways and backways.
- Scenic resources would become increasingly important to residents of and visitors to the area.
- Activities that cause the most contrast and thus are the most noticeable to the casual viewer would be considered to have the greatest effect on scenic quality. The severity of a visual effect depends on a variety of factors, including the size and scale of a project, vegetation and landform manipulation, and the overall visibility of disturbed areas. The more protection that is associated with the management of other resources and special designations, the greater the benefit to visual resources of the surrounding viewsheds.
- Visual contrast ratings would be required for proposed projects in high scenic quality and highly sensitive areas or high-impact projects, but may be used for other projects where it would be the most effective design and assessment tool.
- Projects would be designed to meet VRM class objectives. If a project could not be designed to meet VRM objectives, it would be not be approved or a plan amendment would be necessary.

3.18.2.2 Direct and Indirect Effects

Impacts from VRM Designations

VRM class objectives provide criteria for determining the allowable level of visual contrast that may be created in an area; applying more restrictive VRM generally reduces direct adverse impacts along scenic routes. Applying VRM Class II objectives to any scenic route corridor would retain the existing character of the landscape and setting. In KEPA, Alternative B applies VRM Class II for a distance of 3 miles within the viewshed of the route, while Alternative C applies VRM Class II in the viewshed for a distance of 1 mile from the route. Alternatives B and C would therefore reduce the potential for direct, adverse impacts along designated scenic routes compared to alternatives A, D, and E. Alternatives A, D, and E do not apply VRM management specific to scenic routes, and therefore VRM management in the route viewshed would depend on the surrounding designation. Under alternatives A, D, and E, where scenic routes cross areas of VRM Class III or IV in KEPA, activities that result in readily apparent changes to the landscape character (e.g., new ground disturbance or large-scale structures) could be allowed to dominate the viewshed; such management could lower the scenic values of the corridor to a greater extent than management in KEPA under alternatives B and C. Regardless of VRM designation, the BLM could require activities within the viewshed to take steps to reduce levels of visual contrast. In general, impacts on scenic route resources across the three GSENM units would be similar due to similar VRM management in these areas under all alternatives.

Impacts from Management Actions for GSENM and KEPA

Management that allows habitat and rangeland health improvement projects designed to maintain or enhance natural landscape function (e.g., vegetation treatments) would create adverse changes to the landscape character along scenic routes in the short term, but would result in long-term, direct and indirect, beneficial impacts. Long-term, beneficial impacts would generally be associated with enhancing and restoring ecological processes and functions in the

natural landscape, which in turn could enhance the overall visual character of the scenic corridor.

Management that allows surface disturbance or large-scale permanent structures, such as transmission lines or mineral development, in the viewshed of scenic routes would result in direct short- and long-term, adverse impacts by changing the landscape character. Conversely, special designations (e.g., ACECs and WSAs), certain recreation management areas (e.g., SRMAs with primitive recreation focuses), and lands with wilderness characteristics managed to maintain, preserve, and protect their wilderness characteristics are often managed with constraints on surface disturbance and development that would limit potential adverse effects on the viewshed of scenic routes. In KEPA, adverse impacts on landscape character from surface disturbance or large-scale permanent structures would be most likely to occur under alternatives D and E, followed by alternatives C, A, and B, respectively. Differences between the alternatives are driven by the range of restrictions to mineral development, ROWs, renewable energy permits, structural and nonstructural range improvements, recreation facilities, and the extent and management of special designations in KEPA. In general, impacts on scenic route resources across the three GSENM units would be similar due to restrictions on resource uses in Presidential Proclamation 9682 under all alternatives.

3.18.2.3 Cumulative Effects

The cumulative impacts analysis area used to analyze cumulative impacts on scenic routes is the viewshed of the scenic routes within a 15-mile distance of the Planning Area. Although views can and do extend beyond 15 miles, the 15-mile distance was chosen because it defines the background distance zone and is near the limit of visibility of skylined energy development facilities, such as transmission towers and wind turbines, that may be readily noticeable to casual observers on scenic routes. Beyond that distance, the proposed management actions within the Planning Area would have negligible, if any, contribution to cumulative impacts on scenic routes.

Past, present, and reasonably foreseeable future actions and conditions (Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*) within the cumulative impacts analysis area that have affected and would likely continue to affect scenic route resources are residential, commercial, and industrial developments; mineral development in KEPA that may occur in the viewshed; vegetation treatments; cross-country OHV travel; range improvements; recreational developments; ROWs such as the Lake Powell pipeline; and road construction due to overall changes in landscape character and level of contrast. Actions likely to have the greatest future effect on scenic routes in the cumulative impacts analysis area include activities associated with energy and mineral development, continued urbanization, road construction, developed recreation, and utility development. Road improvement projects along scenic routes such as the HITRR repair project would contribute to cumulative impacts on scenic routes. Short-term adverse impacts could occur while repair activities are in progress, but long-term beneficial impacts could occur through improved driving conditions along scenic routes.

Energy development, which depends on a variety of external factors such as type, location, scale, and operational processes, could have widespread and long-term effects on scenic routes. Generally, alternatives A and B allow less surface disturbance and permanent structures, and fewer areas designated as VRM Class III and IV compared to alternatives C, D,

and E. As a result, adverse cumulative effects are anticipated to be less under alternatives A and B than other alternatives.

3.19 Wild and Scenic Rivers

3.19.1 Affected Environment

The analysis area for WSRs consists of suitable river corridors in the Planning Area. Congressional WSR designation is intended to protect a river's free-flowing condition, water quality, and outstandingly remarkable values such as scenic, recreational, geologic, fish and wildlife, cultural, or other similar values. The three types of tentative classification are wild, scenic, and recreational. Rivers within the Planning Area and adjacent river segments that extend onto Dixie National Forest, Bryce Canyon National Park, and Glen Canyon NRA were assessed in an interagency effort from 1994 to 1998. All streams that were determined to be eligible were then evaluated for suitability during preparation of the GSENM Final EIS and Proposed MMP (BLM 1999a). All river segments and watersheds in the Planning Area were analyzed in the GSENM Final EIS and Proposed MMP for classification as WSR (BLM 1998, 1999a). A total of 224 miles of the Escalante and Paria River systems within the Planning Area were determined to be suitable for inclusion in the WSR system (BLM 2018b). These river corridors are currently managed by the BLM to prevent degradation of the identified outstandingly remarkable values and the tentative classification assigned to each segment (BLM 1999a). Refer to Chapter 2, Section 2.4.5, *Wild and Scenic Rivers*, Table 33 (pages 126–129), and Appendix 1 (*Maps*), Map 31 (page 243), in the AMS as well as Manual 6400 (BLM 2012f) for more information on eligible and suitable river segments.

3.19.2 Environmental Consequences

3.19.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on WSRs within the Planning Area from implementation of the management alternatives. Maps 88 through 91 depict management of WSRs by alternative.

Effects on WSRs from these impacts are generally described in a qualitative fashion, with mileage provided where appropriate to draw distinctions among the alternatives. Impacts on WSRs would primarily result from the following impact mechanisms:

- OHV and recreational use along the suitable river corridors
- Mineral materials disposal on suitable river corridors tentatively classified as "recreational" within KEPA

This analysis uses the following assumptions:

- Analysis of potential impacts is limited to the study corridors of each suitable WSR segment, which generally includes 0.25 mile of land from the ordinary high water mark on each side of the WSR segment.
- Tourism and recreation use within the Planning Area will continue to increase during the life of the RMPs.

3.19.2.2 Direct and Indirect Effects

Under alternatives A and B, all suitable segments will retain their existing tentative classification, including approximately 23.2 miles of Lower Sheep Creek and the Upper Paria River that would continue to be tentatively classified as wild. These two reaches would be classified as tentatively scenic under Alternative C and tentatively classified as recreational under alternatives D and E. Rivers classified as wild are subject to more restrictions than scenic and recreational classifications, respectively. However, Lower Sheep Creek and the Upper Paria River are within the Paria-Hackberry WSA and would be afforded protection under WSA management. The variance in tentative classification across alternatives would result in this corridor being managed as VRM Class I in Alternative B, VRM Class II in Alternative C, and VRM Class III in Alternative D. Under alternatives B, C, D, and E, all suitable segments within WSAs would be managed as VRM Class I. Management actions for OHV and recreational use along suitable river corridors could result in long-term, adverse impacts where they contribute to degradation of the rivers' water quality, tentative classification, and outstandingly remarkable values. Table 3.19-1 through Table 3.19-3 show the miles of suitable rivers reaches within the Planning Area by administrative unit under each alternative.

Table 3.19-1. Miles of Suitable River Reaches within the Planning Area by Administrative Unit under Alternatives A and B

Classification	Escalante Canyons Unit	Grand Staircase Unit	Kaiparowits Unit	KEPA	Total
Suitable Wild	124	16	42	16	**198**
Suitable Scenic	3	N/A	N/A	N/A	**3**
Suitable Recreational	4	4	2	13	**23**
TOTAL	**131**	**20**	**44**	**29**	**224**

Source: BLM 2018f
KEPA – Kanab-Escalante Planning Area, N/A – not applicable

Table 3.19-2. Miles of Suitable River Reaches within the Planning Area by Administrative Unit under Alternative C

Classification	Escalante Canyons Unit	Grand Staircase Unit	Kaiparowits Unit	KEPA	Total
Suitable Wild	124	10	30	11	**175**
Suitable Scenic	3	6	12	5	**26**
Suitable Recreational	4	4	2	13	**23**
TOTAL	**131**	**20**	**44**	**29**	**224**

Source: BLM 2018f
KEPA – Kanab-Escalante Planning Area

Table 3.19-3. Miles of Suitable River Reaches within the Planning Area by Administrative Unit under Alternatives D and E

Classification	Escalante Canyons Unit	Grand Staircase Unit	Kaiparowits Unit	KEPA	Total
Suitable Wild	124	10	30	11	**175**
Suitable Scenic	3	N/A	N/A	N/A	**3**

Classification	Escalante Canyons Unit	Grand Staircase Unit	Kaiparowits Unit	KEPA	Total
Suitable Recreational	4	10	15	18	**47**
TOTAL	**131**	**20**	**45**	**29**	**225**

Source: BLM 2018f
KEPA – Kanab-Escalante Planning Area, N/A – not applicable

The potential for adverse direct and indirect impacts from OHV use and mineral materials disposal along suitable river corridors is lower under alternatives A and B, followed by alternatives C, D, and E, respectively. Alternatives B and C close wild river segments to OHVs, reducing the potential damage to the setting along these segments and erosion that could degrade water quality. All action alternatives close wild or scenic river segments to mineral materials disposal; however, alternatives C, D, and E allow disposals along recreational river segments in KEPA. For river segments tentatively classified as scenic or recreational, disposal of mineral materials is allowed under BLM Manual 6400 (BLM 2012f), but consideration would be given to applying conditions necessary to protect outstandingly remarkable values.

Improper livestock grazing can result in impacts on outstandingly remarkable values through vegetation trampling, an increased potential for wind and water erosion, and associated water quality impacts. Improper livestock grazing, especially near riparian or water sources, can also result in impacts on water quality from transport of E. coli into downstream water resources, potentially resulting in adverse impacts on suitable river corridors. All action alternatives allow livestock grazing along suitable river corridors, but to varying degrees. The potential for adverse direct and indirect impacts from improper livestock grazing would be greatest under alternatives D and E, which allow livestock grazing along the 59,839 acres of suitable river corridors, followed by Alternative C (44,635 acres) and Alternative B (20,918 acres). For river segments tentatively classified as wild, scenic, and recreational, BLM Manual 6400 (BLM 2012f) requires that domestic livestock grazing be managed to protect identified river values. Under all alternatives, domestic livestock grazing would be permitted along suitable river corridors as long as conflicts with the protection and enhancement of river values are avoided.

Management that reduces soil erosion and protects vegetation, particularly in riparian areas, would result in direct, long-term, beneficial impacts on suitable river corridors. Such actions could help maintain plant diversity and preserve water quality and ecological conditions of the rivers. Alternative B would provide the greatest protection for riparian corridors by prohibiting surface-disturbing activities and permanent facilities within 0.5 mile, compared to the 330-foot restriction applied under the remaining alternatives. In addition, alternatives A and B limit recreational group size in riparian areas of the GSENM units, reducing impacts on these resources from visitor waste, vegetation trampling, and erosion.

3.19.2.3 Cumulative Effects

The cumulative impacts analysis area for WSRs is the extent of suitable WSR corridors within the Planning Area. Under all alternatives, the past, present, and reasonably foreseeable future actions with the greatest potential to affect water quantity and quality and free-flowing condition of suitable WSRs in the Planning Area would be OHV and recreational use along the suitable river corridors and surface-disturbing and mineral projects that could result in sedimentation, erosion, and other impacts that affect WSR values. Refer to Appendix N,

Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions, for additional information.

Based on the tentative classifications and management of WSRs across alternatives, including managing the Upper Paria 1 and Lower Sheep Creek segments as recreational, the potential for adverse direct and indirect cumulative impacts from OHV and recreational use as well as mineral development along the suitable river corridors would increase under alternatives D and E compared to the other alternatives, followed by alternatives C, A, and B, respectively. However, under all alternatives, proposed development and surface-disturbance projects and recreational permits for large events would require subsequent site-specific permitting and analysis of potential impacts. During site-specific permitting, BMPs and mitigation would be applied to projects to reduce potential impacts on WSR segments, as appropriate.

3.20 Wilderness Study Areas

3.20.1 Affected Environment

Sixteen WSAs and ISAs are located within the Planning Area (Map 92). The wilderness characteristics and other resource values and uses found in each WSA are described in the *Utah Statewide Wilderness Study Report* (BLM 1991). These 16 WSAs and ISAs account for approximately 881,159 acres (47 percent) of the Planning Area (BLM 2018b). Refer to Chapter 2, Section 2.4.6, *Wilderness Study Areas* (pages 129–131), and Appendix 1 (*Maps*), Map 32 (page 244), in the AMS (BLM 2018b) for descriptions of the WSAs.

Section 603(c) of FLPMA provides direction, including a non-impairment mandate, to the BLM on the management of WSAs. Pursuant to the non-impairment mandate, the BLM will manage WSAs so as not to affect or impair the suitability of such areas for preservation as wilderness until Congress passes legislation to either designate them as part of the National Wilderness Preservation System or release them from further study or protection (BLM 2018b). Activities permissible within WSAs include temporary uses that create no new surface disturbance and do not involve permanent placement of structures. Temporary, non-surface-disturbing activities, as well as valid existing rights or activities that meet the exception to the non-impairment standard (described in Section 1.6.C.2 of BLM Manual 6330 [BLM 2012g]), may generally continue in WSAs.

3.20.2 Environmental Consequences

3.20.2.1 Methods and Assumptions

This section describes direct, indirect, and cumulative effects on WSAs from implementation of the management alternatives. BLM Manual 6330 allows for little flexibility in the management of a WSA because it does not allow discretionary actions that adversely affect WSAs based on the non-impairment standard. Impacts on WSAs would primarily result from the following impact mechanism:

- Management of resources and resources uses (e.g., OHV travel and vegetation treatments) within the boundaries of WSAs

This analysis uses the following assumptions:

- Management actions that enhance wilderness characteristics and biological or ecological health would improve the wilderness quality and suitability of the WSAs.

- The BLM will continue to manage all WSAs in the Planning Area in accordance with BLM Manual 6330 until Congress either designates the WSA as wilderness or releases the WSA for other uses.

3.20.2.2 Direct and Indirect Effects

Wilderness characteristics within WSAs would be protected under all alternatives.

Allowing access for OHV travel via routes in the WSA could adversely affect opportunities for solitude or primitive and unconfined recreation. It is important to note that there are few existing primitive routes and ways in the Planning Area WSAs, reducing the effect of travel management decisions under alternatives that allow OHV use. Under Alternative A, WSAs are managed to provide undeveloped, primitive, and self-directed visitor experiences without OHV or mechanized access. Under Alternative B, all WSAs are closed to OHV use. Alternatives C, D, and E allow OHV use in WSAs on routes designated during the travel management planning process (except in the Steep Creek WSA, which is closed under Alternative C). Although there are few routes in WSAs, OHV management under alternatives C, D, and E is more likely to adversely affect opportunities for solitude or primitive and unconfined recreation than would OHV management under alternatives A and B. However, under all action alternatives, the BLM would ensure that routes do not exceed the approximate conditions of impact on the wilderness characteristics that existed on October 21, 1976 (BLM Manual 6330).

Successful vegetation management to reduce the intensity of wildland fire, improve rangeland health, and control invasive and noxious weeds would have a direct, long-term beneficial impact on WSAs where they improve naturalness. Vegetation treatments could also have direct, short-term adverse impacts on opportunities for solitude. Alternative B prohibits most vegetation treatments in WSAs and, compared to other alternatives, could reduce long-term beneficial impacts from improved naturalness and short-term adverse impacts on solitude while treatments are conducted. Alternatives A, C, D, and E allow vegetation treatments in WSAs, and would result in similar long-term beneficial and short-term adverse impacts on WSA values. Alternatives D and E would allow the use of nonnative species consistent with applicable BLM WSA policy, which may increase flexibility in managing vegetation treatments and restoration in WSAs but could also affect naturalness in the area depending on the type and extent of nonnative species and their possible spread.

In addition to effects from management and activities inside WSA boundaries, adjacent management and allowable land uses also have the potential to affect wilderness characteristics in WSAs. In particular, adverse effects can occur from managing areas adjacent to WSAs as open to ROWs, available for utility-scale renewable energy development, available to leasable mineral development with standard or moderate constraints, open to mineral materials disposal, not unsuitable for coal mining, and open to cross-country travel. Such management and land uses can add new surface disturbance and facilities that adversely affect the appearance of naturalness when viewed from the WSA, or can add new sounds and human presence that adversely affect opportunities for solitude in the WSA. Under all alternatives, adjacent management and land uses with the potential to affect wilderness characteristics are most likely to occur in KEPA. In general, management and land uses in KEPA that would affect wilderness characteristics in WSAs are most likely under alternatives D and E, followed by alternatives C, A, and B, respectively.

3.20.2.3 Cumulative Effects

The cumulative impacts analysis area for WSAs is the extent of WSAs within the Planning Area and the full extent of WSAs that intersect the Planning Area (881,159 acres). Past, present, and reasonably foreseeable projects with the greatest potential to contribute to cumulative impacts in WSAs include those projects that create audible or visual intrusions, impacts on scenic quality, or a noticeable increase in human presence within WSAs. These projects include oil and gas development in the Upper Valley Field, potential development of the Alton Coal Tract, development and road repairs along Highway 89 and HITRR, ROW development including the Lake Powell pipeline and other buried pipelines, and other development projects identified in Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*.

All direct and indirect impacts from the alternatives would contribute to cumulative impacts on WSAs. Among the alternatives, Alternative B would have the greatest likelihood of reducing potential adverse cumulative impacts on WSAs due to this alternative restricting OHV use and vegetation treatments. Alternatives C, D, and E would have a greater likelihood of increasing potential adverse cumulative impacts due to the allowance of OHV use on designated routes as well as the allowance of the use of nonnative species for restoration (alternatives D and E). If routes are designated for OHV use in or adjacent to WSAs during the travel management planning process, there could be direct, short- and long-term reductions in outstanding opportunities for solitude, naturalness, and/or primitive recreation along those routes. The magnitude and extent of direct and indirect cumulative effects would depend on the location and distance of the routes designated in WSAs during travel management planning.

3.21 Social and Economic Considerations: Environmental Justice; Native American Religious Concerns, Hazardous Materials and Public Safety

The analysis area for social and economic considerations (often referred to as socioeconomics) includes the extent of Garfield and Kane Counties in Utah and portions of Coconino County in Arizona. The analysis area encompasses the locations that would experience the greatest social and economic effects resulting from RMP decisions. This section also discusses environmental justice (EJ) concerns as they pertain to minority, Native American, and low-income populations in the region, and also discusses hazardous materials and public safety, Native American religious concerns, and socioeconomic conditions such as income, population, and employment trends.

3.21.1 Socioeconomic Conditions

This section provides a brief overview of baseline socioeconomic conditions; refer to Appendix T, *Socioeconomic Baseline Report*, for more information on baseline social and economic conditions and Appendix U, *Economic Assessment Report,* for more information on baseline conditions and trends for key sectors relevant to the economic analysis.

The population in the analysis area has grown over the past 17 years, though population growth in the analysis area is below statewide aggregate population growth. While the Kane-Garfield two-county region in Utah compares to Utah's statewide estimates for people below the poverty line, Coconino County, Arizona has almost double Utah's population rate below the poverty line.

Additionally, the median household incomes for Kane, Garfield, and Coconino Counties are close to 20, 28, and 18 percent less than that of entire State of Utah, respectively. Regarding long-term changes in the counties' socioeconomic characteristics, Kane and Coconino Counties generally reflect Utah's State averages for population, employment, and income growth. Over approximately the past 17 years, the majority of municipalities in Garfield County lost population, with the only areas gaining population being associated with recreation development and activity in the western portion of the county. The variety of recreational opportunities, ecosystem services, and other nonmarket values in the Planning Area generally provides a range of benefits to Kane, Garfield, and Coconino Counties, as well as to tourists and visitors to the region.

As part of the planning process, the BLM hosted a socioeconomic workshop and solicited comments on socioeconomic concerns. A variety of local citizens, businesses, and interest groups expressed the importance of maintaining GSENM landscapes and values and the importance of tourism for local economies. Other commenters noted the benefits of multiple use in the Planning Area. Refer to Appendix T, *Socioeconomic Baseline Report*, for more information on the socioeconomic workshop and comment period.

Multiple studies have been conducted on the social and economic values of GSENM, including the following:

- Headwaters Economics found that western counties with protected public lands grow more quickly than counties without protected public lands. The local economies of Garfield and Kane Counties grew since the designation of GSENM, specifically in terms of indicators such as per-capita income, labor income, non-labor income, service jobs, population, and jobs (Headwaters Economics 2017).
- Utah State University's College of Natural Resources found, based on a 2004 frontcountry use survey, that the average visitor group spent $495 in Garfield and Kane Counties, which supported 430 full-time equivalent jobs (Burr et al. 2010).
- A study by Gil Miller of Economic Associates of Utah and Kevin Heaton of Utah State University (Miller and Heaton 2015) indicates that livestock grazing on GSENM provides substantial economic benefits to Garfield and Kane Counties, Utah.

Refer to Section 2.5, *Social and Economic Features* (pages 131–136), in the AMS (BLM 2018b) and Appendix T, *Socioeconomic Baseline Report*, for more information on socioeconomic conditions in the analysis area.

The term *nonmarket values* refers to the benefits individuals attribute to experiences of the environment or uses of natural and cultural resources that do not involve market transactions and therefore lack prices. Examples include the benefits received from wildlife viewing, hiking, or hunting for recreation. An understanding of nonmarket values in the analysis area helps to put economic values and impacts into a broader socioeconomic context. Refer to the *Nonmarket Values* section in Appendix U*, Economic Assessment Report*, for additional information.

3.21.2 Environmental Justice

EJ analyses seek to assess the impacts, and especially any disproportionately adverse impacts, on minority or low-income communities. Executive Order 12898 established a requirement for Federal agencies to incorporate EJ considerations into planning and decision processes to help

ensure that no person or group bears a disproportionate burden of adverse impacts (White House Archives 1994). In 1997, the Council on Environmental Quality issued guidance for considering EJ within the NEPA process (CEQ 1997). Refer to Executive Order 12898 and Council on Environmental Quality guidelines for more information on the definitions and considerations pertinent to this action. Refer to Section 2.5.1, *Environmental Justice* (pages 131–132), in the AMS (BLM 2018b) for more information on the minority percentage or income status thresholds for evaluating potential environmental effects of projects. Refer to Appendix T, *Socioeconomic Baseline Report*, for more information on social conditions in the study area.

According to the AMS, a low-income and minority EJ population is present for the purposes of this analysis because the proportion of low-income and minority residents in Coconino County is more than 10 percentage points higher than the proportion of low-income and minority residents in the reference population. Coconino County also is home to a Native American EJ population for the purposes of this analysis. Refer to Section 2.5.1, *Environmental Justice* (pages 131–132), in the AMS (BLM 2018b) for data on the low-income, minority, and Native American populations in the three counties of the study area as well as the State of Utah.

3.21.3 Native American Religious Concerns

Although there are small populations of Native American peoples in Garfield and Kane Counties, there is a sizeable Native American population living in Coconino County with members of at least 27 different Alaska Native and American Indian tribes represented in Coconino County. In addition, the Kaibab Band of Paiute Indian Reservation is approximately 10 miles from the southwest extent of the Planning Area and the Navajo Reservation is approximately 10 miles from the southeast extent of the Planning Area. While there are no identified tribal treaty rights in the Planning Area, Native American populations continue to utilize portions of the Planning Area for plant collection and other traditional and religious uses and various tribes have a stake in how cultural resources and other resources are managed in the Planning Area. The BLM conducts formal consultation annually with the Kaibab Band of Paiute Indians, and Hopi, Zuni, Navajo, Ute, and Paiute Indian Tribes of Utah tribes. Refer to Section 3.2, *Cultural Resources*, for more information on Native American history and uses of the Planning Area.

3.21.4 Hazardous Materials and Public Safety

No hazardous, toxic, or unapproved solid waste sites are known to occur on public lands in GSENM. The potential for use, storage, and transport of hazardous wastes in the Planning Area is generally limited to minor quantities in areas of ongoing oil production in the Upper Valley Field. The use, storage, and transport of hazardous materials is generally limited in the remainder of the Planning Area due to the limited amount of industrial and other development that would be associated with hazardous materials. Public safety issues in the Planning Area are generally related to fires and fire response, traffic and traffic accidents, and injuries associated with recreation and other public land uses and geologic hazards (e.g., rock climbing, OHV accidents, landslides).

3.21.5 Environmental Consequences

3.21.5.1 Methods and Assumptions

This section describes potential direct, indirect, and cumulative socioeconomic effects that could result from implementation of the alternatives. Potential economic impacts include changes in employment, income, business costs, and tax revenue to local, State, and Federal Government entities. Changes in employment and income can then result in indirect socioeconomic impacts, such as changes in population, which can lead to community impacts on housing, infrastructure, and other government services.

Impacts on socioeconomics would primarily result from the following impact mechanisms:

- Mineral development
- Grazing management (e.g., changes in AUMs)
- Recreation management
- Forestry product management
- Nonmarket value impacts

Effects on social and economic conditions from these impact mechanisms are generally described in a qualitative fashion, with acreages and other metrics provided where appropriate and available. Quantitative economic impact analysis requires that sufficient information exists to quantify current conditions or a change in the value of production or in costs or expenditures resulting from a specific management action or set of actions. Where sufficient data exist, these changes in value or costs can then be analyzed with an economic model to estimate likely changes in employment and income. In other cases, employment and income effects cannot be quantified, but the basic data on costs and values can be presented.

Where quantifiable, employment and income impacts are estimated in this study with the IMPLAN input-output model (IMPLAN version 3.1). IMPLAN is a regional economic impact model that provides a mathematical accounting of the flow of dollars and commodities through a region's economy. The region, or socioeconomic study area, for economic impacts in this study is Garfield and Kane Counties. The IMPLAN model requires inputs of impacts on industries in the analysis area, in terms of changes in the value of production or expenditures. These changes in value or cost require data and assumptions specific to the study area. Refer to Appendix U, *Economic Assessment Report*, for additional information on IMPLAN analysis methods, assumptions, inputs, and results.

The socioeconomic impact analysis is based on the following general assumptions:

- Under all alternatives, BLM management of public lands would not alter current population growth trends or demographic characteristics. As described in Appendix T, *Socioeconomic Baseline Report*, the population of the analysis area is expected to increase consistent with recent trends with growth rates generally lower than the statewide average. Because demand for housing and public services is determined largely by population growth, the demand for housing and public services is expected to increase at a similar rate as population growth during the planning period.
- In general, BLM management of public lands would maintain a balance between multiple uses. Groups with interests in the economic use of Federal lands (e.g., for grazing or mining)

or groups with interests in conservation would continue to be provided with a range of multiple uses on BLM-administered surface lands in the Planning Area.

- The economic assessment is based on the methods and assumptions described in Appendix U, *Economic Assessment Report*.

3.21.5.2 Socioeconomic Impacts

Total Economic Effects

This section summarizes the total economic effects resulting from the IMPLAN modeling. Refer to Appendix U, *Economic Assessment Report,* for additional information on economic terminology and the IMPLAN modeling methods and results.

The IMPLAN model showed total economic effects from GSENM management would generally be greatest under alternatives D and E, followed by Alternative A, then Alternative C, with Alternative B having the least economic effect. Alternatives D and E would generally have the greatest economic effect due to the increased potential for resource use (e.g., livestock grazing) compared to the other alternatives. Alternative A would have a slightly higher economic effect than alternatives B and C due to a higher number of active AUMs under this alternative. Total modeled employment ranges from 537 jobs supported annually in Alternative B to 549 jobs supported annually in alternatives D and E. Similarly, total industry activity ranges from $30.79 million annually in Alternative B to $31.25 million annually in Alternative D.

The IMPLAN model showed total economic effects from KEPA management would generally be greatest under alternatives D and E, followed by Alternative C, then Alternative A, with Alternative B having the least total economic effect. Alternatives D and E generally have the greatest economic effect due to the increased potential for mineral development and resource use in KEPA compared to the other alternatives. Total employment ranges from 396 jobs supported annually in Alternative B to 503 jobs supported annually in alternatives D and E. Similarly, industry activity ranges from $23.41 million annually in Alternative B to $38.42 million annually in alternatives D and E.

Refer to Appendix U, *Economic Assessment Report*, for additional information on modeled total economic effects under the alternatives.

Mineral Development

Under all action alternatives, certain areas in KEPA are available for mineral leasing, mineral materials disposal, and locatable mineral exploration and development. Mineral-related economic impacts would be associated with job opportunities from mineral projects; increased economic inputs and revenue associated with wages, expenditures, and sales of mined products; and royalties and payments to Federal and State economies resulting from the extraction and sale of minerals. In general, alternatives D and E would result in the greatest potential for mineral development and associated economic impacts, followed by Alternative C, then Alternative B, with Alternative A having the least potential impacts associated with mineral development. Alternatives D and E would increase potential economic effects due to the increased potential for mineral development in KEPA, compared to the other alternatives. Refer to Appendix U, *Economic Assessment Report*, for additional information on IMPLAN modeled results and associated economic effects for oil and gas development, coal

development, locatable mineral development, and mineral materials disposal under the management alternatives.

Mineral development could also result in long-term impacts on social and economic conditions, as these projects can last 40 or more years. For oil and gas and other extractive mineral projects, the majority of jobs, revenue, and expenditures occur during the construction or development phase of projects, creating a "boom" in population growth and economic activity. However, when mineral development rapidly decreases due to project completion, market conditions, or closing areas to mineral development, "bust" cycle impacts can occur. Bust cycle effects can result in decreased population, decreased school enrollment, reduced employment, reduced labor income, and overall reduced economic activity. Given the limited outlook for mineral development described in the *Mineral Potential Report* and RFD (BLM 2018c), the potential for substantial boom and bust cycles and associated socioeconomic impacts would be lower than for other regions in Utah that have experienced larger-scale mineral development.

Mineral development could also result in adverse impacts on recreation and other public land uses if those uses, or the experience of users, are degraded by the development and operation of mineral projects. In addition, mineral development could result in adverse impacts on nonmarket values such as air quality, scenic views, ecosystem services, and other nonmarket values, which could affect social and quality of life conditions. Due to the greatest potential for mineral development and resource use, alternatives D and E would increase the potential for impacts on nonmarket values, compared to the other alternatives.

Grazing Management

Potential impacts on socioeconomics could result from grazing management actions associated with allocation of AUMs, areas identified as unavailable for grazing, management that affects livestock grazing access and operations, management that results in conflicts with livestock grazing, and management that affects rangeland conditions (i.e., BLM *Utah Standards for Rangeland Health*). The assessment of potential impacts on socioeconomic conditions resulting from grazing management focuses on impacts associated with AUMs, areas unavailable for grazing, and management that affects rangeland conditions.

The primary impacts on economic conditions are associated with changes in AUM allocations and the associated value of AUMs. The alternatives include variations in allocated AUMs, with alternatives D and E allocating the most active AUMs, followed by Alternative A and Alternative C with relatively similar AUM allocations, and Alternative B having the least amount of AUMs allocated. Livestock grazing–related employment, income, and economic activity would be greatest under alternatives D and E, followed by alternatives A and C, with Alternative B having the most adverse economic impact, primarily resulting from the reduced level of AUMs in Alternative B compared to the other alternatives. Refer to Appendix U, *Economic Assessment Report*, for additional information on the IMPLAN economic modeling methods and modeled economic effects associated with grazing management in the alternatives. It is important to note that livestock grazing permittees may experience other market- and nonmarket-based impacts associated with livestock grazing management as described in Section 3.12, *Livestock Grazing*.

As noted by Torell et al. (2002), if a ranch is seasonally dependent on Federal forage, reducing AUMs can create forage imbalances and produce a greater reduction in grazing capacity than

just the loss of Federal AUMs. The impact of eliminating or reducing grazing during selected seasons would depend on ranch resources and the substitute forage alternatives that are economically and physically available (Torell et al. 2014).

Healthy rangeland ecosystems can provide multiple goods and services that can increase the economic, social, and cultural well-being of individuals and communities. For example, healthy rangelands can provide for increased forage and production value, improved quantity and quality of water, and improved ecosystem function/services that benefit social and economic conditions. In general, Alternative B includes the greatest restrictions and requirements on lands available for grazing and stocking rates (expressed as AUMs) to meet BLM *Utah Standards for Rangeland Health*, thereby increasing costs and limiting a permittee's flexibility and available management tools, resulting in adverse social and economic impacts on those that depend on grazing. Alternative C and alternatives D and E, respectively, emphasize other actions to improve rangeland health versus changing stocking rates, limiting potential adverse effects on permittees and associated social and economic impacts.

Recreation Management

BLM management decisions would affect market values associated with recreation primarily by identifying group size limits, designating SRMAs and RMZs with targeted recreation opportunities and management, and implementing other recreation management that could influence the number of recreation visitors in the Planning Area (e.g., management of competitive events, camping, and parking). Visitation results in expenditures in the local economy, such as at restaurants or gas stations, and generates economic activity measured by indicators such as economic output, employment, and labor income.

The IMPLAN model showed economic effects associated with recreation management in both GSENM and KEPA would generally be greatest under alternatives B and C and least under alternatives D, E, and A. Alternatives B and C would designate and manage a larger amount and a larger acreage of SRMAs and RMZs for targeted recreation opportunities and management, which may slightly increase recreation visitors interested in those targeted recreation activities in the SRMAs/RMZs. However, alternatives D and E would increase group size limits compared to the other alternatives, which may increase visitors and recreation use in GSENM, and associated economic activity, compared to the other alternatives. Total modeled employment associated with recreation management in GSENM ranges from 484 jobs supported annually under alternatives D and E to 499 jobs supported annually under Alternative B. Total modeled industry activity associated with recreation management in GSENM ranges from $28.1 million annually under alternatives D and E to $28.9 million annually under Alternative B. Total modeled employment associated with recreation management in KEPA ranges from 341 jobs supported annually under alternatives D and E to 351 jobs supported annually under Alternative B. Total modeled industry activity associated with recreation management in KEPA ranges from $19.8 million annually under alternatives D and E to $20.4 million annually under Alternative B. As indicated by the results reported above and further detailed in Appendix U, *Economic Assessment Report*, variations in recreation management among the alternatives are not anticipated to result in substantial variations in economic effects. Continued trending increases in recreation use and visitation in the Planning Area are more likely to affect economic conditions than variations in recreation management in the alternatives.

Refer to Appendix U, *Economic Assessment Report*, for additional information on the IMPLAN economic modeling methods and modeled economic effects associated with recreation management in the alternatives.

Forestry Product Management

The economic analysis of forestry-related activity considered the permit fees received by the BLM for both Christmas tree and wood permits, as well as the amount spent on stewardship contracts, as described in the *Methodology* section of Appendix U, *Economic Assessment Report*. In general, the overall economic activity (i.e., employment, labor income, industry activity) associated with forestry activities and management would be minimal in the context of the analysis area economy and would generally be similar across the alternatives.

Refer to Appendix U, *Economic Assessment Report*, for additional information on the IMPLAN economic modeling methods and modeled economic effects associated with forestry management in the alternatives.

Nonmarket Value Impacts

Appendix U, *Economic Assessment Report,* describes a variety of nonmarket values relevant to the Planning Area including nonmarket use values, non-use values, Special Designation and enhancement values, tribal uses and values, ecosystem service values, and social values. In general, alternatives that reduce development potential and increase the potential for conservation of the natural environment confer beneficial impacts on non-use values, enhancement values, and ecosystem service values and can also confer beneficial impacts on tribal uses and values by protecting natural resources and tribal use areas/sites. As a result, alternatives B and A would decrease potential adverse impacts on these values compared to alternatives C, D, and E. In general, alternatives that increase potential resource use, especially historic (e.g., grazing) and traditional uses, confer beneficial impacts on nonmarket use values and social values and can also confer beneficial impacts on tribal uses by providing for increased opportunities for tribal use of resources (e.g., plant collecting without a permit). As a result, alternatives D, E, and C would increase potential beneficial impacts on these nonmarket values compared to alternatives B and A.

All alternatives include a variety of decisions that would provide opportunities to conduct research, outreach, and education associated with resources in GSENM. These decisions include requesting researchers to integrate a public outreach and education component as part of research; cataloguing inventory of natural, cultural, and socioeconomic knowledge; cooperating with colleges and universities on research and outreach; facilitating the transfer of research to the public; and improving the understanding of carbon capture associated with soil and rangeland management in the Planning Area. These activities are expected to result in beneficial impacts on monument resources and nonmarket values by increasing the understanding of GSENM resources and values and their function in the overall ecological systems for the public and other interested parties.

Refer to Appendix U, *Economic Assessment Report*, for additional information on nonmarket values associated with the Planning Area.

Cumulative Effects

The cumulative impacts analysis area for socioeconomic impacts includes the extent of Garfield and Kane Counties in Utah and Coconino County in Arizona. As summarized in the sections above and further detailed in Appendix U, *Economic Assessment Report,* variations in management across the alternatives would generally result in relatively minor differences in impacts on employment, labor income, and industry activity in the analysis area. However, these effects in combination with other past, present, and reasonably foreseeable actions would result in cumulative impacts. Past, present, and reasonably foreseeable projects that may contribute to cumulative impacts include mining development in the analysis area (e.g., the Upper Valley Field, Alton Coal Tract), large ROWs and other linear projects such as the Lake Powell pipeline, increased recreation and visitation across the analysis area, and other projects or actions that increase the potential for jobs, higher wages, economic output, and royalties and taxes.

In addition, a variety of Federal, State, and local resource and land management plans can guide development and contribute to cumulative impacts. Past, present, and reasonably foreseeable plans that could affect social and economic conditions include Garfield County and Kane County RMPs and comprehensive plans, Capitol Reef National Park Livestock Grazing and Trailing Management Plan and Environmental Assessment, BLM Kanab Field Office RMP, and management plans for national parks and forests in the analysis area. Refer to Appendix N*, Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*, for more information.

The impact of management alternatives on population growth in the area and demand for housing and public services is largely derived from the impact of management alternatives on employment opportunities in the area, and would likely be indistinguishable among alternatives, given current growth trends and the relatively small magnitude of the impact of alternatives on employment.

3.21.5.3 Environmental Justice

Direct and Indirect Effects

There is no information to suggest that adverse impacts on resources, resource uses, or special designations would affect identified minority or low-income populations differently than the general population of the analysis area. This conclusion is based on the following:

- The BLM found no evidence that adverse impacts identified by the analysis of each resource, resource use, and special designation would fall primarily on one or more of the identified minority or low-income populations. Because management actions would typically be dispersed throughout the public lands in the Planning Area, adverse impacts would tend to not be concentrated in locations where minority or low-income populations are present.
- The BLM found no evidence to suggest that any of the identified minority or low-income populations were subject to cumulative or multiple exposure to high and adverse environmental and health effects.
- No differential patterns of consumption of fish and wildlife were identified that would cause impacts on fish or wildlife under any of the management alternatives to be high and adverse and disproportionately affect minority or low-income populations.

- No pathways were identified that indicate greater physical sensitivity of any of the identified minority or low-income populations to particular impacts.

Cumulative Effects

The cumulative impacts analysis area for EJ impacts includes the extent of Garfield and Kane Counties in Utah and Coconino County in Arizona. These areas encompass the range within which EJ communities may experience direct or indirect effects from management actions and reasonably foreseeable future actions. As noted above, there are no anticipated direct or indirect impacts that would disproportionately affect EJ communities. As a result, the RMPs are not anticipated to contribute to or lead to cumulative impacts related to EJ.

3.21.5.4 Native American Religious Concerns

In general, alternatives A and B would increase the potential for protecting natural and historic resources important to Native Americans through increased special designations, allocations, and management that would preserve natural and historic resources important to Native Americans. All alternatives would allow for Native American collection of vegetation and forest products for traditional uses, but with variation in permit requirements. Alternatives D and E would allow Native American non-commercial traditional use of vegetation and forest and woodland products for the collection of herbs, medicines, traditional use items, or items necessary for traditional, religious, or ceremonial purposes without a permit. Alternative B would allow Native American non-commercial traditional/ceremonial use of vegetation and forest and woodland products without a permit, but would require a free-use permit for non-commercial personal use collection of vegetation and forest and woodland.

Refer to Section 3.2, *Cultural Resources*, for additional information on potential impacts on tribal uses, cultural/religious sites, and other areas and resources important to Native Americans.

Cumulative Effects

Direct and indirect impacts associated with management in the RMPs could combine with other past, present, and reasonably foreseeable future project impacts, resulting in cumulative impacts on Native American religious concerns and values. Past, present, and reasonably foreseeable projects could contribute to cumulative impacts on Native American religious concerns and values if the project degrades or diminishes resources important to Native Americans, such as historic settings or vegetation materials used for traditional purposes. Surface-disturbing projects would have the most potential to contribute to these cumulative impacts, such as the Lake Powell pipeline and other buried fiber optic lines, vegetation treatments such as the Upper Paria Watershed Vegetation Treatments, and other surface-disturbing projects identified in Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*. In general, alternatives C, D, and E would increase the potential for development projects that could contribute to cumulative impacts, compared to alternatives A and B, which generally have less potential for surface disturbance and development.

3.21.5.5 Hazardous Materials and Public Safety

Direct and Indirect Effects

The potential for adverse impacts from hazardous materials and waste could result from any activity that involves human presence; these adverse impacts would be similar under all alternatives. These activities would typically include recreation, mineral exploration and development, and ROW development, because all could increase risks associated with generation, use, transport, and storage of hazardous wastes and materials. However, mineral activities are the most likely activities to increase the risk of hazardous wastes and materials generation. Therefore, management that allows an increase in mineral resource extraction could have short-term, adverse impacts. Alternatives D and E are likely to result in the greatest potential impacts, followed by Alternative C and Alternative B, with Alternative A having the least potential for mineral development and thus the least potential for impacts associated with hazardous materials.

Under all alternatives, adverse impacts would be limited through the BLM's application of Federal regulations regarding hazardous materials, substances, and waste; national contingency plans; BLM policies on hazardous waste disposal; and continued coordination with Federal and State partners regarding hazardous materials and waste issues. Any BLM-administered surface land sites contaminated with hazardous wastes would be reported, secured, and remediated according to applicable Federal and State regulations and contingency plans. Such efforts would be costly and likely involve several regulatory agencies and other entities or individuals. If remediation of a large hazardous waste site were necessary, considerable funding would be required for the public health and safety program to support the remediation effort, which could result in major impacts. However, the BLM does not anticipate any substantial new hazardous materials sites on public lands in the Planning Area due to the limited potential for and anticipated interest in mineral and mining activities in the Planning Area (see Section 3.13, *Minerals*, for additional information).

Cumulative Effects

The cumulative impacts analysis area for hazardous materials and public health and safety is the Planning Area and any routes used to transport hazardous materials to and from the Planning Area. While the potential for mineral development in the Planning Area is relatively minimal, any increase in mining and mineral development activity could contribute to increases in hazardous materials and thus increases in potential cumulative impacts. Past, present, and reasonably foreseeable future projects identified in Appendix N, *Cumulative Impact Methodology and Past, Present, and Reasonably Foreseeable Future Actions*, that could increase hazardous materials use, storage, and transport include other mineral projects (e.g., Upper Valley Field, Alton Coal Tract), transmission lines (e.g., Garkane transmission line), and pipelines (e.g., Lake Powell pipeline).

4 Consultation and Coordination

4.1 Introduction

This chapter documents the Bureau of Land Management's (BLM's) public outreach, consultation, and coordination efforts throughout the preparation of the Resource Management Plans (RMPs)/Environmental Impact Statement (EIS). The Council on Environmental Quality's regulations (40 Code of Federal Regulations [CFR] 1506.6) provides guidance for ensuring public involvement in land use planning in accordance with the National Environmental Policy Act (NEPA). Title II, Section 202 of the Federal Land Policy and Management Act (FLPMA) directs the BLM to coordinate its land use planning with that of tribes, other Federal agencies, and State and local governments, to the extent that those external plans are consistent with the laws governing the BLM-administered surface lands. Presidential Proclamation 9682 also directs the BLM to undertake monument planning with maximum public involvement including, but not limited to, consultation with federally recognized tribes and State and local governments and to consult with other Federal land management agencies in the local area in developing the management plans.

4.2 Public Collaboration and Outreach

Public involvement is vital and legally mandated when creating an RMP/EIS (BLM 2005b). In developing the RMPs/EIS, the BLM solicited public input during the public scoping period, a socioeconomic comment period, and the public comment period that followed the release of the Draft RMPs/EIS. The BLM's public outreach and collaboration are ongoing and will continue throughout the development of these RMPs/EIS.

4.2.1 Scoping

4.2.1.1 Scoping Process

The intent of the scoping process is to obtain public input when identifying issues to be addressed in the RMPs/EIS. The BLM formally initiated the external scoping process for the RMPs and EIS on January 16, 2018, with publication of a notice of intent in the *Federal Register* (83 FR 2179). The public scoping period closed on April 13, 2018, 15 days after the last public meeting was held on March 29, 2018, for a total scoping period of 107 days.

In addition to the notice of intent, outreach methods included (1) a January 16, 2018, media release identifying the start of the public scoping period and methods by which interested parties could comment; (2) a March 9, 2018, media release announcing meeting dates and locations; and (3) scoping notification letters sent to the BLM's interested party list.

4.2.1.2 Scoping Meetings

The BLM hosted two public scoping meetings in March 2018 (Table 4-1). These meetings gave the public the opportunity to learn about the land use planning process and identify additional planning issues.

Table 4-1. Scoping Meetings and Attendance

Date and Time	Location	Approximate Number of Attendees
March 28, 2018	Kanab, Utah	191
March 29, 2018	Escalante, Utah	211

Source: BLM 2018a

Refer to Section 2.3, Opportunities for Public Comment (page 2), in the Scoping Report (BLM 2018a) for more information on methods and opportunities for public comment.

4.2.1.3 Scoping Results

The BLM received 120,061 submissions from the public during and after the official public scoping period. Comments received were coded according to issue categories. The issue categories that were identified most frequently were: (1) process; (2) purpose and need; (3) alternatives; (4) natural, biological, and cultural resources; (5) resource uses; (6) special designations; and (7) social and economic considerations. Refer to Appendix A, Comment Summary by Resource Topic (pages A-1 through A-124), in the Scoping Report (BLM 2018a) for a summary of public comments.

4.2.2 Socioeconomic Workshop and Comment Period

In accordance with the BLM Land Use Planning Handbook (H-1601-1), the BLM hosted a socioeconomic workshop on May 31, 2018. The workshop provided an opportunity for local government officials, community leaders, and other citizens to discuss regional economic conditions, trends, and strategies with BLM managers and staff. During the workshop, the BLM solicited comments from attendees; the BLM also accepted socioeconomic comments through June 8, 2018. During the workshop, five attendees provided oral comments and an additional 11 people submitted written comments during the comment period.

The BLM considered input received at the socioeconomic workshop and during the comment period in the development of alternatives and in the analysis of environmental consequences.

4.2.3 Draft RMPs/EIS Public Comment Period

Refer to Appendix W, *Draft RMPs/EIS Comment Analysis Report,* for a description of the public comment period on the Draft RMPs/EIS, comments received, and comment responses.

4.2.4 Future Public Involvement

The notice of availability and Dear Reader Letter for the Proposed RMPs/Final EIS identify the opportunity to protest the proposed land use planning decisions during the 30-day period after the notice of availability is published in the *Federal Register*. A 60-day Governor's Consistency Review will occur concurrent with this protest period. In accordance with the John D. Dingell Jr. Conservation, Management, and Recreation Act of 2019, a 60-day public comment period on a proposed target shooting closure will occur after the notice of availability for the Proposed RMPs/Final EIS is published in the Federal Register and concurrent with the 60-day Governor's Consistency Review. A Record of Decision (ROD) and Approved RMPs will be issued following the Governor's Consistency Review period and resolution of protests on the Proposed RMPs/Final EIS. The ROD will outline administrative review procedures that would apply to implementation-level decisions included in the RMPs, as those decisions are not subject to

protest. The ROD and Approved RMPs will be made available electronically on the BLM's ePlanning website.

4.3 Consultation and Coordination

This section documents the consultation and coordination efforts undertaken by the BLM throughout the RMPs/EIS process. The BLM coordinates with a variety of organizations who have interests in the Planning Area during the land use planning process. These organizations are largely governmental bodies with responsibility for creating, administering, and monitoring policy on public lands within the Planning Area. Consultation with these parties occurs throughout the development of the RMPs/EIS.

4.3.1 Cooperating Agencies

The regulations implementing NEPA allow Federal agencies to invite tribal, State, and local governments, as well as other Federal agencies, to serve as cooperating agencies during the NEPA process. 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. Refer to Section 2.5, Cooperating Agency Involvement (page 2), in the Scoping Report (BLM 2018a), for a list of the agencies and tribes that were invited to be cooperating agencies.

Cooperating agencies are Federal, State, or local government agencies or Native American tribes that enter into a formal agreement with the BLM to help develop the environmental analysis for the RMPs/EIS. The BLM invited 11 State and Federal agencies and two counties to be cooperating agencies; of these, five signed formal memoranda of understanding with the BLM to share knowledge and resources throughout development of the RMPs/EIS. Additionally, the BLM invited the following seven federally recognized Native American tribes to participate as cooperating agencies: Kaibab Band of Paiute Indians, Navajo Nation, Paiute Indian Tribe of Utah, Pueblo of Zuni, the Hopi Tribe, Pueblo of San Felipe, and the Uintah and Ouray Ute Tribe. The Kaibab Band of Paiute Indians and Pueblo of San Felipe accepted the invitation and participated as a cooperating agency during development of the RMPs/EIS.

Table 4-2 below depicts the Federal, State, and local agencies as well as other organizations that participated as cooperating agencies on the RMPs/EIS.

Table 4-2. Cooperating Agencies

Agency Type	Agency Name
Federal	National Park Service
State	Public Lands Policy Coordinating Office
Local	Kane County, Garfield County, Washington County Water Conservancy District
Tribal	Kaibab Band of Paiute Indians, Pueblo of San Felipe

The BLM held initial cooperating agency meetings from May 8 through May 11, 2018, to familiarize cooperators with the RMP development process and to develop alternatives. The BLM held another workshop with the cooperating agencies on May 29 and May 30, 2018, for them to comment on and further refine the alternatives. Following release of the Draft RMPs/EIS, the BLM hosted meetings with cooperating agencies on February 12 and 13, 2019, to solicit input on the Proposed Plans. During the RMPs/EIS process, the BLM provided

cooperating agencies opportunities to review administrative draft versions of the RMPs/EIS and other information including review of the Administrative Draft RMPs/EIS and the Administrative Draft of the Proposed RMPs/Final EIS. The BLM continued to work with cooperating agencies throughout the process to refine and finalize content.

Presidential Proclamation 9682 clarified "that consistent with protection of the objects identified above and other applicable law, the Secretary may allow motorized and non-mechanized vehicle use on roads and trails existing immediately before the issuance of Proclamation 6920 and maintain roads and trails for such use." During the review of the administrative draft EIS, both Kane and Garfield Counties submitted maps to the BLM that illustrate routes that they identified as existing prior to designation of Grand Staircase-Escalante National Monument (GSENM) on September 18, 1996. The BLM is in the process of reviewing this information, and following further discussion with the Counties, will take this information into consideration when initiating implementation-level travel planning.

4.3.2 Native American Tribes

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, requires Federal agencies to coordinate and consult on a government-to-government basis with sovereign Native American tribal governments whose interests may be directly and substantially affected by activities on federally administered lands. Consultation with federally recognized Native American tribes is also required under NEPA, FLPMA, and Presidential Proclamation 9682. Additionally, there are numerous laws, regulations, and guidance requiring tribal consultation to identify any Native American cultural values, religious beliefs, or traditional practices that could be affected by BLM actions on Federal lands. The BLM invited the six tribes to participate as cooperating agencies. The Kaibab Band of Paiute Indians accepted the invitation and participated as a cooperating agency during development of the RMPs/EIS.

In July 2018, the BLM initiated government-to-government consultation with ten Native American tribes, including the Kaibab Band of Paiute Indians, the Hopi Tribe, the Navajo Nation, the Paiute Indian Tribe of Utah, the Pueblo of Acoma, the Pueblo of Tesuque, the Pueblo of San Felipe, the Pueblo of Zuni, the San Juan Southern Paiute Tribe, and the Uintah and Ouray Ute Tribe. The Pueblo of San Felipe later agreed to be a cooperating agency on December 4, 2018. The Shivwits Band of the Paiute Indians and the Pueblo of San Felipe expressed interest in future consultation and meetings. The BLM has continued to engage and consult with all interested tribes throughout the planning process.

Prior to the completion of the Final EIS, the BLM extended an offer to meet with each of the interested tribes to provide an update and discuss any concerns they might have. None of the contacted tribes accepted the BLM's offer for this additional consultation.

4.3.3 Additional Consultation

4.3.3.1 U.S. Fish and Wildlife Service

Presidential Proclamation 9682 directs the BLM to consult with other Federal land management agencies in the local area during the development of the RMPs. Endangered Species Act (ESA) Section 7 consultation between the BLM and the U.S. Fish and Wildlife Service (USFWS) is ongoing. Under ESA Section 7(a)(2), the BLM must ensure that the proposed action is not likely to jeopardize the continued existence of federally listed threatened and

endangered species or adversely modify designated critical habitat. Following development of the Proposed Plans identified in these RMPs/EIS, the BLM coordinated with the USFWS to develop a Biological Assessment. The BLM will submit the Biological Assessment and initiate formal consultation with the USFWS as required under ESA Section 7(a)(2). Following USFWS review of the Biological Assessment, the USFWS will prepare a Biological Opinion that will be integrated into the ROD, as appropriate.

4.3.3.2 State Historic Preservation Officer Consultation

During preparation of these RMPs/EIS, the BLM coordinated with state agencies, local counties, the State Historic Preservation Officer (SHPO), and other consulting parties in compliance with Section 106 of the National Historic Preservation Act. The SHPO has been included as a cooperating agency within the Memorandum of Agreement with the State of Utah and the Public Lands Policy Coordination Office. The Public Lands Policy Coordination Office is responsible for coordinating and commenting on all proposals for Utah's public lands. The BLM, in conversation with the SHPO, has determined that the BLM can meet Section 106 coordination requirements through the NEPA process, as provided by 36 CFR 800.8. The National Park Service (NPS) will be designated as a co-lead Federal agency to serve as the agency official responsible for fulfilling its collective responsibilities under Section 106 of the National Historic Preservation Act pursuant to 36 CFR 800.2(a) when GSENM-administered grazing undertakings occur within the Glen Canyon National Recreation Area's boundary on both BLM and NPS lands. The designation will be documented in the environmental record prepared for NEPA and during Section 106 consultation. Where such future actions have the potential to cause effects on historic properties located on lands under the jurisdiction of the NPS, Glen Canyon National Recreation Area will remain responsible for making determinations of eligibility, assessment of effects, and treatment of effects for those properties. Additionally, the BLM will be the agency responsible for complying with Section 106 of the National Historic Preservation Act on BLM-administered surface lands and the NPS will be the responsible agency on Glen Canyon National Recreation Area lands.

In addition to government-to-government consultation, the BLM invited the following consulting parties to participate in the Section 106 process to provide input on historic properties that may be affected by proposed decisions and to provide other input:

- Garfield County
- Grand Staircase-Escalante Partners
- Hole in the Rock Foundation
- Kaibab Band of Paiute Indians
- National Park Service
- Old Spanish Trail Association
- Pueblo of Acoma
- Pueblo of San Felipe
- Pueblo of Tesuque
- Pueblo of Zuni
- State of Utah School and Institutional Trust Lands Administration
- State of Utah Public Lands Policy Coordinating Office
- Utah Diné Bikéyah
- Utah Division of State History
- Utah Professional Archaeological Council
- Utah Rock Art Research Association

4.4 Monument Advisory Committee and Resource Advisory Council

Presidential Proclamation 9682 provides that, "the Secretary shall maintain one or more advisory committees under the Federal Advisory Committee Act (5 U.S.C. App.) to provide information and advice regarding the development of the above-described management plans, and, as appropriate, management of the monument." Because this planning effort includes lands both inside and outside GSENM, the BLM sought information and advice from the Utah Resource Advisory Council (RAC). The Utah RAC is composed of 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 9862. The Utah RAC met on June 17 and June 18, 2019, where they heard a presentation about and discussed the GSENM-KEPA RMPs/EIS, and took public comments. During the meeting, the RAC provided the BLM with recommendations and comments on the RMPs. The input addressed management of recreation management, vegetation, lands with wilderness characteristics, cultural resources, grazing, travel and transportation, and overall management flexibility. The BLM used and incorporated the input and recommendations in the development of the Proposed RMPs/Final EIS.

The BLM is in the process of establishing a monument advisory committee for GSENM to advise on future planning and management of the monument. The monument advisory committee's charter was signed on September 5, 2018, and memorialized a 15-member committee that includes State and local government officials, tribal members, representatives of the recreation community, local business owners, and private landowners.

4.5 Coordination and Consistency with Federal, State, and County Plans

The BLM planning regulations and FLPMA require that the development of an RMP for public lands be coordinated and consistent with other Federal agency, tribal, and State and county plans to the extent possible by law, and inconsistencies between Federal and non-Federal government plans be resolved to the extent practical. To ensure such consistency, the BLM coordinated with relevant parties and reviewed relevant plans and policies to evaluate the consistency of the Proposed RMPs presented in this document.

The BLM worked closely with the NPS throughout the planning process to address consistency with NPS plans due to its interest as an adjoining land management agency, management responsibilities for the Old Spanish National Historic Trail, and the BLM administration of grazing on Glen Canyon National Recreation Area lands. The agencies believe that consistency has been achieved. The BLM did not identify any inconsistencies with tribal plans or policies, and tribes have not notified the BLM of inconsistencies with their plans over the course of the planning process. Refer to Section 4.3.2, *Native American Tribes,* for a full description of coordination and consultation with Native American tribes.

4.5.1 Inconsistencies with State and County Plans, Policies, and Procedures

The BLM is aware of specific State and county plan decisions relevant to aspects of public land management that are discrete from and independent of Federal law. However, the BLM is

bound by Federal law. As a consequence, there may be inconsistencies that cannot be resolved or reconciled where State and county plans conflict with Federal law, regulations, or policy. In addition, the relevant goals, objectives, or policies of a State or county plan are often equivalent to an activity- or implementation-level decision and not a land use planning decision. Such State and county goals would be addressed in subsequent BLM activity- or implementation-level decisions.

In general, the State and county plans and the BLM's Proposed RMPs are conceptually consistent. The BLM's Proposed RMPs may not use the specific language from the State and county plans, but that is largely due to differences in regulatory requirements and audiences. In addition, the State and counties do not have the same legal and regulatory requirements as the BLM, and their management decisions address issues associated with private land ownership, State and county lands, hunting, and other areas, which are outside the BLM's jurisdiction.

The State and counties identified several inconsistencies between the BLM's Draft RMPs and the State or county plans. The BLM coordinated with the State and counties throughout the planning process to resolve inconsistencies between the Draft RMPs and State and local plans, and have presented more consistent management actions in the Proposed RMPs. Areas in which substantial consistency was achieved include Areas of Critical Environmental Concern, lands with wilderness characteristics, vegetation, wild horses, paleontological resources and geology, and livestock grazing. However, there are still some areas where the BLM was not able to achieve complete consistency with State and county plans. The remaining inconsistencies are as follows:

- Visual Resource Management (VRM): The most apparent inconsistency that the BLM has not been able to resolve between the Proposed RMPs and State and county plans is the management of Wilderness Study Areas (WSAs) as VRM Class I. BLM policy directs that, "All WSAs should be managed according to VRM Class I management objectives until such time as Congress decides to designate the area as wilderness or release it for other uses" (BLM 2012g). The State and county plans either apply VRM Classes II and III to WSAs or contain broad goals and objectives that are generally not consistent with VRM Class I management of WSAs. However, the BLM considered the land use management priorities from Garfield and Kane Counties during completion of the visual resource inventory and before applying VRM management class allocations to all areas in the Planning Area. In order to be more consistent with State and county plans, small isolated VRM blocks were applied a VRM allocation consistent with the surrounding dominant VRM allocation. The BLM came closer to meeting county consistency in the Proposed RMPs by adding exception language for VRM Class II areas that would allow public or recreation infrastructure to be constructed under Class III objectives. In addition, the Proposed RMPs do not adopt a 1-mile VRM Class II buffer around NPS-administered lands, and instead adopt a VRM Class based on the visual resource inventory or other considerations.
- Travel and Transportation: Planning for travel and transportation has also been a topic of concern for the State and counties throughout the planning process. The two areas of most concern are deferral of travel management planning until after the RMP process, and recognition of roads claimed under Revised Statute (R.S.) 2477. BLM policy is generally to defer travel management route designations until after RMPs because those are implementation-level decisions that require site-specific analysis. However, the BLM has analyzed the addition of three routes to the road network under the alternatives in these RMPs, which are high-priority roads for the counties. Rights associated with R.S. 2477 are determined through a process that is independent of the BLM's RMP and travel management planning processes and therefore is not addressed in these RMPs. However,

should any R.S. 2477 right-of-way be acknowledged or confirmed through this separate process, the BLM will adjust its travel management plan accordingly. The BLM has added language to these RMPs to this effect regarding R.S. 2477 and valid existing rights to explain the inconsistency.

- Recreation Management: The State and counties raised concerns and identified inconsistencies with their plans relating to management of recreation. Generally, they seek to enhance opportunities for recreation, maximize access, allow for development of facilities in high-use areas, and promote the distribution of people to various sites within the Planning Area. However, they do not want extensive designated recreation areas that are subject to restrictions that may equate to special designations. BLM policy directs the establishment of recreation areas focused on attaining a variety of outcomes (BLM 2014). The Preferred Alternative (Alternative D) in the Draft RMPs/EIS identified one Extensive Recreation Management Area (ERMA) across the Planning Area, with several Recreation Management Zones within the ERMA. In order to increase alignment with State and county plans, the BLM coordinated with the State and counties and identified targeted Special Recreation Management Areas (SRMAs) for certain high-use areas. In the Proposed Plans, the BLM developed management prescriptions for those SRMAs acceptable to the State and counties, where possible. Inconsistencies remain where certain recommended areas were not proposed to be a SRMA (e.g., Horse Canyon), and where recommended State and county management prescriptions were not carried forward due to other existing constraints (e.g., GSENM lands withdrawn from mineral entry, WSAs). However, the State and counties generally support the management direction for SRMAs and RMZs as presented in the Proposed Plans as described above.

While other inconsistencies may exist between the Proposed RMPs and State and county plans, the above-described inconsistencies are those that have been of most concern in coordination with the State and counties. As described above, the BLM's Proposed RMPs address some aspects of the identified inconsistencies and strive to increase alignment among the BLM and State and county

4.6 List of Preparers

An interdisciplinary team of BLM resource specialists and independent consulting firms prepared the RMPs/EIS with the help of cooperators and input from the public. Refer to Appendix D, *List of Preparers*, for more information.