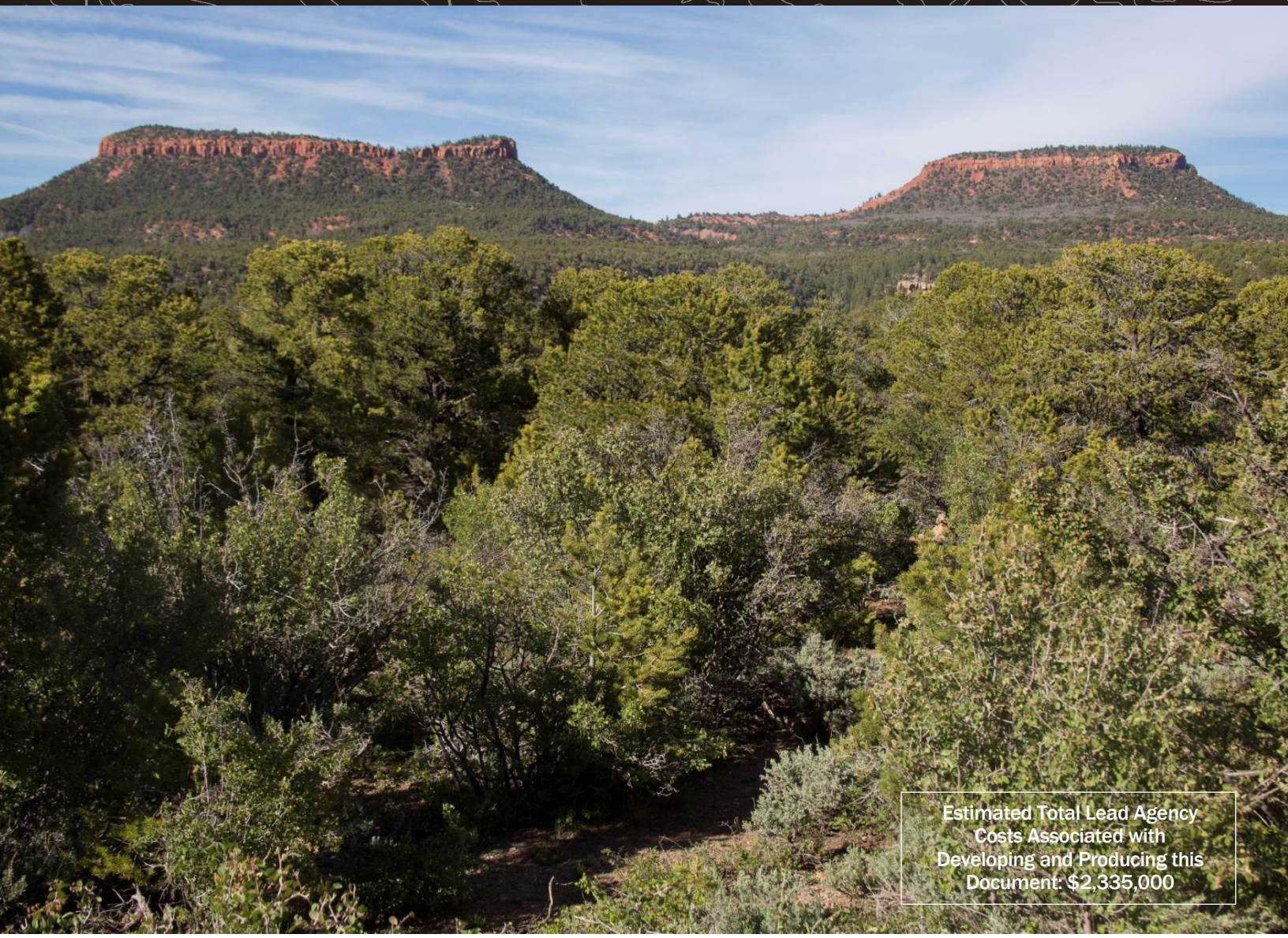
U.S. Department of the Interior
Bureau of Land Management

U.S. Department of Agriculture
U.S. Forest Service

Bears Ears National Monument: Proposed Monument Management Plans and Final Environmental Impact Statement
Shash Jáa and Indian Creek Units
Volume 1: Chapters 1–4

July 2019



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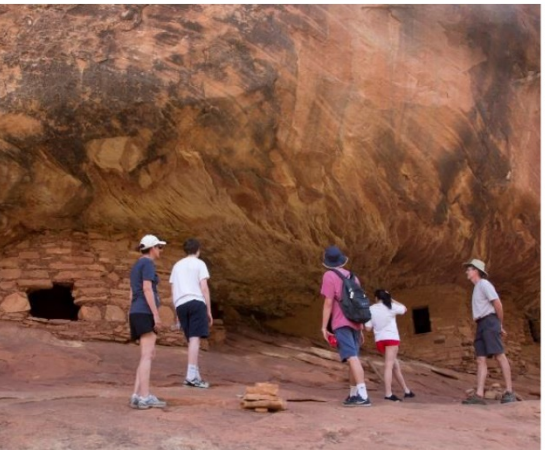

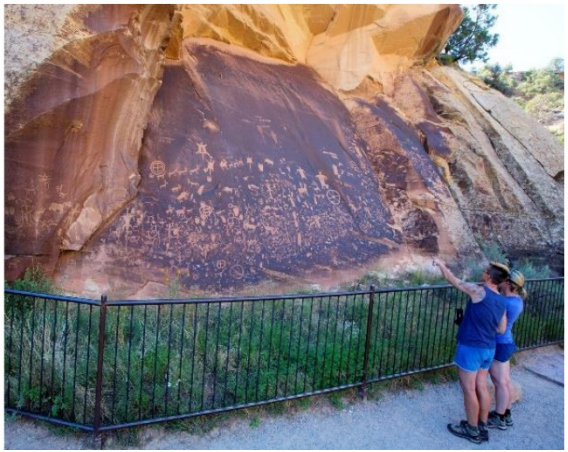

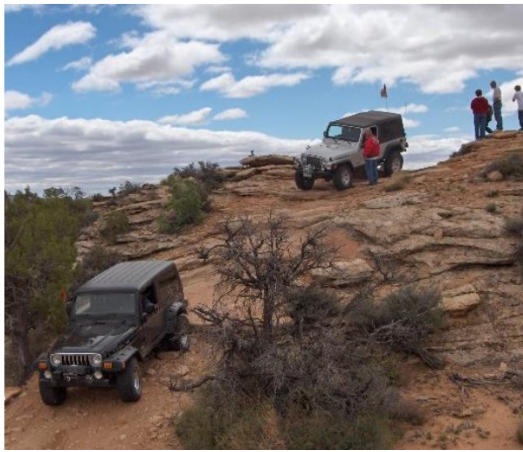

BLM Mission

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.

USFS Mission

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

The Section 508 amendment of the Rehabilitation Act of 1973 requires that information in federal documents be accessible to individuals with disabilities. The agencies have made every effort to ensure that the information in this document is accessible.
If you have problems accessing the information contained herein, please contact Jacob Palma, Bureau of Land Management Monument Manager, at (435) 587-1500 or jepalma@blm.gov.

BEARS EARS NATIONAL MONUMENT
MONUMENT MANAGEMENT PLANS AND ENVIRONMENTAL IMPACT STATEMENT

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

Document Status: Draft ( ) Final (X)

Abstract: These Monument Management Plans (MMPs)[1] and the Environmental Impact Statement (EIS) have been prepared by the U.S. Department of the Interior Bureau of Land Management (BLM) and U.S. Department of Agriculture U.S. Forest Service (USFS) with input from cooperating agencies and American Indian Tribes. The purpose of the MMPs is to provide for the proper care and management of Monument objects and values including the "object[s] of antiquity" and "objects of historic or scientific interest" of the Bears Ears National Monument (BENM, or Monument) that were identified in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. The MMPs will also provide a comprehensive framework for the BLM's and USFS's allocation of resources and management of the public lands within the BENM pursuant to the multiple-use and sustained yield mandate of the Federal Land Policy and Management Act and the National Forest Management Act, and the specific direction in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. The MMPs approved by the BLM would amend the existing *2008 Bureau of Land Management Monticello Field Office Record of Decision and Approved Resource Management Plan*, as amended (hereafter referred to as the Monticello RMP), to remove the BENM from the Monticello RMP Decision Area and would replace the management from the Monticello RMP for the BLM-administered lands within the Monument. The USFS would use the information in the MMPs/EIS to amend the existing 1986 Manti-La Sal National Forest Land and Resource Management Plan, as amended (hereafter referred to as the Manti-La Sal LRMP) to guide future management of USFS-administered lands within the BENM.

The EIS describes and analyzes five alternatives for managing the Monument's Shash Jáa and Indian Creek Units on approximately 201,876 acres of lands administered by the BLM and the USFS. The No Action Alternative (Alternative A) is a continuation of current management; under this alternative public lands and resources would continue to be managed under the Monticello RMP and the Manti-La Sal LRMP. All action alternatives were developed using input from the public, stakeholders, and cooperating agencies to provide for the proper care and management of Monument objects and values. Alternative B would apply prescriptive land and resource use restrictions and would identify areas within the Planning Area for additional long-term protections of resource values. Alternative C emphasizes adaptive management. Alternative D would apply fewer land and resource use restrictions and allow for more discretion for multiple uses and review of actions on a case-by-case basis. Alternative E was developed in response to comments received on the Draft MMPs/EIS and includes elements of Alternatives A, B, C, and D. Alternative E is the BLM's and USFS's Proposed MMPs/preferred alternative. Major planning issues addressed include cultural resources, American Indian Tribal concerns, and recreation management.

Protest Period: 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 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 MMPs may be found online at https://www.blm.gov/filing-a-plan-protest and at 43 CFR 1610.5-2. As allowed by 36 Code of Federal Regulations 219.59, the USFS is utilizing the BLM's administrative review processes.

Comment Period for Proposed Target Shooting Closure: A comment regarding the proposed closure that would prohibit target shooting at campgrounds, developed recreation sites, petroglyph sites, and structural cultural sites within the Monument must be received within 60 days of the date the Notice of Availability for the BENM Proposed MMPs/Final EIS is published in the *Federal Register*. Please refer to the Dear Reader letter for additional information regarding this comment period.

For further information, contact:

Jacob Palma, Monument Manager
(435) 587-1500; email: jepalma@blm.gov
ePlanning Website: https://goo.gl/XFr6V4
Bureau of Land Management, Canyon Country District Office
82 Dogwood Avenue
Moab, Utah 84532

[1] In this document, the BLM uses the term *Monument Management Plan* synonymously with the term *Resource Management Plan* as defined in 43 Code of Federal Regulations 1600 and in the BLM's Land Use Planning Handbook (H-1601-1).

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
440 West 200 South, Suite 500
Salt Lake City, UT 84101-1345
http://www.blm.gov/utah

In Reply Refer To:
BLM/1610 (UT-935)

Dear Reader:

Enclosed for your review and comment are the Proposed Monument Management Plans/Final Environmental Impact Statement (Proposed MMPs/Final EIS) for the Shash Jáa and Indian Creek Units of the Bears Ears National Monument (BENM, or Monument). The Proposed MMPs/Final EIS were prepared by the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) pursuant to the BLM and USFS land use planning regulations (43 Code of Federal Regulations [CFR] 1600 and 36 CFR 219, respectively) and the National Environmental Policy Act of 1969. The BENM was established by Presidential Proclamation 9558 on December 28, 2016. On December 4, 2017, Presidential Proclamation 9681 clarified and modified the designation of the BENM. The revised BENM boundaries include two separate units, known as the Shash Jáa and Indian Creek Units, that are reserved for the proper care and management of the objects of historic and scientific interest within their boundaries.

The Proposed MMPs/Final EIS analyze five alternatives for future management of the BENM Shash Jáa and Indian Creek Units, which include 201,876 acres of Federal lands in San Juan County, Utah. The Shash Jáa Unit contains 97,393 acres of BLM-administered lands and 32,587 acres of USFS-administered lands. The Indian Creek Unit contains 71,896 acres of BLM-administered lands. The MMPs approved by the BLM would amend the existing *2008 Bureau of Land Management Monticello Field Office Record of Decision and Approved Resource Management Plan* (RMP), as amended, to remove the BENM from the Monticello RMP Decision Area and would replace the management from the Monticello RMP for the BLM-administered lands within the Monument. The USFS would use the information in the MMPs/EIS to amend the existing 1986 Manti-La Sal National Forest Land and Resource Management Plan (LRMP), as amended to guide future management of USFS-administered lands within the BENM.

The BLM and USFS have developed a range of alternatives to resolve resource conflicts that are reflected in the Proposed MMPs/Final EIS. The agencies have done this by considering 1) issues raised through public scoping and consultation and coordination with cooperating agencies and American Indian Tribes, 2) issues raised by agency resource specialists, 3) applicable planning criteria, 4) comments received on the Draft MMPs/EIS, and 5) government-to-government consultation with American Indian Tribes. This process has resulted in the development of four alternatives and the No Action Alternative, which represents a continuation of current management. These alternatives are described in their entirety in Chapter 2. Alternative E has been identified by the BLM and USFS as the Proposed MMPs/preferred alternative. Identification of the Proposed MMPs/preferred alternative does not constitute a final decision on the part of the BLM and USFS. Chapter 3 presents the affected environment and analyzes the potential impacts to resources or resource uses from implementation of the alternatives. Chapter 4 describes the BLM's and USFS's consultation and coordination efforts throughout the process.

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

The MMPs includes 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 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 MMPs may be found online at https://www.blm.gov/filing-a-plan-protest and at 43 CFR 1610.5-2. As allowed by 36 CFR 219.59, the USFS is utilizing the BLM's administrative review processes.

In addition, pursuant to the John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 (Dingell Act, Public Law 116-9, Section 4103), the BLM is soliciting comments on the proposed closure of target shooting on certain BLM-administered lands within the Monument. As proposed, target shooting would generally be allowed but would be prohibited at campgrounds, developed recreation sites, petroglyph sites, and structural cultural sites. 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 BENM Proposed MMPs/Final EIS is published in the *Federal Register*. Written comments may be submitted as follows (submittal of electronic comments is encouraged):

- Email: blm_ut_monticello_monuments@blm.gov
- Mail: Bureau of Land Management, Canyon Country District Office, 82 Dogwood Avenue, Moab, Utah 84532 Attn: Lance Porter

Before including your address, telephone number, email address, or other personally identifying information in your protest, be advised that your entire protest—including your personal identifying information—may be made publicly available at any time. You may request that the BLM withhold your personal 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 and USFS will issue Records of Decision (RODs) and Approved MMPs (BLM)/an approved LRMP amendment (USFS). The RODs and Approved MMPs (BLM)/approved LRMP amendment (USFS) will be made available electronically on the BLM's ePlanning website.

Thank you for your continued interest in the Bears Ears National Monument MMPs/EIS.

Sincerely,

Edwin L. Roberson
State Director

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CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

1.1. Introduction

The Bears Ears National Monument (BENM, or Monument) was established by Presidential Proclamation 9558 on December 28, 2016. On December 4, 2017, Presidential Proclamation 9681 clarified and modified the boundaries of the BENM. The revised BENM boundary includes two separate units known as the Shash Jáa and Indian Creek Units that are reserved for the proper[1] care and management of the objects of historic and scientific interest within their boundaries. These two units together are referred to as the *Planning Area* in this document.

The Federal lands within the Planning Area are currently managed by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) under the *Bureau of Land Management Monticello Field Office Record of Decision and Approved Resource Management Plan* (hereafter referred to as the Monticello RMP), as amended (BLM 2008a), and the *Land and Resource Management Plan: Manti-La Sal National Forest* (hereafter referred to as the Manti-La Sal LRMP), as amended (USFS 1986).[2] The BLM is preparing a Monument Management Plan (MMP)[3] for the Indian Creek Unit, and the BLM and USFS are jointly preparing an MMP for the Shash Jáa Unit. The BLM and the USFS have prepared these Proposed MMPs and Environmental Impact Statement (EIS) pursuant to the BLM land use planning regulations (43 Code of Federal Regulations [CFR] 1600), USFS land use planning regulations (36 CFR 219), and the National Environmental Policy Act (NEPA) of 1969.

The MMPs approved by the BLM would amend the existing Monticello RMP to remove the BENM from the Monticello RMP Decision Area and would replace the management from the Monticello RMP for the BLM-administered lands within the Monument. The USFS would use the information in the MMPs/EIS to amend the existing Manti-La Sal LRMP to guide future management of USFS-administered lands within the BENM. The USFS plan amendment is described in further detail in Appendix Q: Proposed Plan Amendment for the Land and Resource Management Plan: Manti-La Sal National Forest. A USFS decision to amend the Manti-La Sal LRMP based on the information and analysis contained in the MMPs/EIS would be made following USFS planning regulations at 36 CFR 219. As allowed by 36 CFR 219.59, the USFS is utilizing the BLM's administrative review processes.

The approval of the MMPs and associated land use plan amendments and subsequent management of the Federal lands within the BENM subject to the approved MMPs is the Federal action analyzed in this EIS.

Lands that were excluded from the BENM by Proclamation 9681 will continue to be managed by the BLM and the USFS as currently directed under the Monticello RMP and the Manti-La Sal LRMP, respectively.

1.2. Purpose of and Need for the Plans

The purpose of the MMPs is to provide a comprehensive framework for the BLM's and the USFS's allocation of resources and management of the public lands within the Planning Area pursuant to the multiple-use and sustained yield mandates of the Federal Land Policy and Management Act (FLPMA) of 1976 and the National Forest Management Act (NFMA) of 1976, and the specific direction in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. The purpose of the MMPs is to provide for the proper care and management of Monument objects and values including the "object[s] of antiquity" and "objects of historic or scientific interest" identified in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. These objects and values are also identified in Appendix A: Resources, Objects, and Values Identified within the Bears Ears National Monument.

The need for the MMPs is established by Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, FLPMA, and NFMA. Presidential Proclamation 9558 states, "For purposes of

[1] Gray shading indicates changes made between the Draft MMPs/EIS and Proposed MMPs/Final EIS in Chapters 1 through 4 and Appendices A through N of the Proposed MMPs/Final EIS. See Section 1.8 for more information.

[2] The Monticello RMP and the Manti-La Sal LRMP are referred to frequently throughout the EIS, and therefore the author-date citation is provided here at first mention only.

[3] In this document, the BLM uses the term *Monument Management Plan* synonymously with the term *Resource Management Plan* as defined in 43 CFR 1600 and in the BLM's Land Use Planning Handbook (H-1601-1).

protecting and restoring the objects identified above, the Secretaries shall jointly prepare a management plan for the monument and shall promulgate such regulations for its management as they deem appropriate." FLPMA requires that the BLM "develop, maintain, and when appropriate, revise land-use plans" (43 United States Code [USC] 1712 (a)). Similarly, the NFMA requires the USFS to "develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System" (16 USC 1604).

1.3. Planning Area

The Planning Area covers approximately 228,794 acres in San Juan County, Utah (Map 1-1 and 1-2). Most of Planning Area—201,876 acres—is Federal lands to which the adopted MMPs would apply. The remaining lands include private, Utah School and Institutional Trust Lands Administration (SITLA), and State lands. The Planning Area is composed of two Units. The Shash Jáa Unit contains 97,393 acres of BLM-administered lands and 32,587 acres of USFS-administered lands. The Indian Creek Unit contains 71,896 acres of BLM-administered lands.

1.3.1. Shash Jáa Unit

The northern end of the Shash Jáa Unit is approximately 10 miles west of Blanding, Utah, and is accessed via Utah State Route 95 (SR-95). The southern end is located approximately 3.5 miles west of Bluff, Utah, and is accessed from U.S. Highway 163 (US-163) and US-191. The Unit is generally bounded by the Butler Wash cliff rim just east of the Butler Wash Road (Road B262), the San Juan River to the south, the Wilderness Study Areas (WSAs) of Cedar Mesa to the west, Bears Ears Buttes to the northwest, and South Elks Road to the north. The major geographic features in the area are the Bears Ears Buttes and Comb Ridge. Arch Canyon, located in the northern end of the Shash Jáa Unit, is a perennial source of water, as are the lower ends of Mule Canyon and Fish Canyon. Comb Ridge is situated between Comb and Butler Washes, and all three features run north to south along the length of the Unit. The Shash Jáa Unit also includes two archaeological sites that are not contiguous to the main part of the Unit. The Doll House is located on USFS-administered lands to the northwest of the main Unit, and the Moon House is located on BLM-administered lands to the west of the main Unit.

The primary existing land uses in the Shash Jáa Unit are recreation, paleontological and archaeological exploration and study, religious uses for members of American Indian Tribes, and livestock grazing. Popular recreation activities include hiking, backpacking, off-highway vehicle (OHV) riding, scenic driving, and dispersed camping. Cultural tourism has increased in popularity as visitors are drawn to prehistoric and historic cultural resources such as rock writings, cliff dwellings, and the Hole-in-the-Rock Trail. Personal firewood collection is allowed with a permit on all USFS-administered lands within the Unit, excluding Wilderness areas. Some wood cutting for personal use is permitted in the northern end of the Unit on BLM-administered lands. The Unit contains the existing San Juan River Area of Critical Environmental Concern (ACEC), portions of the existing Cedar Mesa Special Recreation Management Area (SRMA), the McLoyd Canyon-Moon House and Comb Wash Recreation Management Zones (RMZs), the Mule Canyon WSA and portions of the Fish Creek Canyon WSA (Map 1-3), SR-95 (known as the Bicentennial-Trail of the Ancients Scenic Byway), a small portion of the Dark Canyon Wilderness, the Arch Canyon Inventoried Roadless Area (IRA), and the Elk Ridge Road Scenic Backway. Part of the Hole-in-the-Rock Trail passes through the Unit.

1.3.2. Indian Creek Unit

The Indian Creek Unit is accessed by Utah State Route 211 (SR-211), which is also the primary access to the Needles District of Canyonlands National Park. The Unit is bounded by the Manti-La Sal National Forest to the south, Canyonlands National Park to the west, Lockhart Basin to the north, and the Harts Point Road to the east. Indian Creek flows through and bisects the Unit. Indian Creek Canyon begins as a narrow canyon in the southeastern portion of the Unit and opens into a broad valley bottom that is rimmed by Wingate Sandstone cliffs. Lavender Mesa and Bridger Jack Mesa are in the southern portions of the Indian Creek Unit. North and South Six Shooter Peaks are prominent features in the Indian Creek valley. Newspaper Rock, a well-known petroglyph panel, is in the southern end of the Unit in the main canyon of Indian Creek. Dugout Ranch, now owned by the Nature Conservancy, is located within the Indian Creek Unit and is home to the Canyonlands Research Center.

As with the Shash Jáa Unit, primary existing land uses in the Indian Creek Unit include recreation and livestock grazing. The recreation activities include rock climbing, hiking, camping, dispersed camping, scenic driving, cultural tourism, and OHV riding. Rock climbing is the most popular recreational use in the area. Scientific research is being conducted on soil and vegetation resources in the area. The Indian Creek Unit contains the Lavender Mesa and Shay Canyon ACECs, the existing Indian Creek SRMA, the Bridger Jack Mesa WSA (Map 1-4), and SR-211 (Indian Creek Corridor Scenic Byway).

1.4. Issues and Related Resource Topics Identified through Scoping

The BLM and USFS identified issues to be addressed in the MMPs and EIS through public and internal scoping and through outreach to cooperating agencies and American Indian Tribes. The public scoping period began on January 16, 2018, and extended through April 11, 2018. Public scoping meetings were held in the communities of Bluff and Blanding, Utah. A total of 165,466 submissions were received from the public during the scoping period. Public comments were categorized in one of three ways: 1) issues to be addressed in the BENM MMPs/EIS, 2) issues to be addressed through policy or administrative action (and therefore not addressed in the MMPs/EIS), and 3) issues beyond the scope of the MMPs/EIS.

Many of the public comments received during the scoping period raised issues that were beyond the scope of the development of the MMPs. When deciding which issues to address, the agencies considered how the issues related to the purpose and need; whether the issues address points of disagreement, debate, or dispute regarding an anticipated outcome from a proposed action; whether a detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives; whether environmental impacts associated with the issue are a significant point of contention among the public and other agencies; and whether there are potentially significant impacts on resources associated with the issue.

Table 1-1 presents the primary issues identified during scoping that are within the scope of the development of the MMPs. Additional detail regarding the scoping process, scoping comments received, and issues identified during scoping is available in the *Bears Ears National Monument: Monument Management Plans and Environmental Impact Statement Shash Jáa and Indian Creek Scoping Report* (BLM and USFS 2018).

Table 1-1. Issues Analyzed in Detail

Resource Topic	Issues
Air resources	How would land management decisions in the BENM affect air quality, including emissions of criteria pollutants, greenhouse gas emissions, and impacts on air quality related values?
Cultural resources	How would the BLM and USFS manage cultural resources to provide for the proper care and management of Monument objects and values described in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681? How would the management of recreation, livestock grazing, and other resource uses affect cultural resources including sites eligible for or listed on the National Register of Historic Places, traditional cultural properties, and American Indian sacred sites? How would the BLM and USFS engage American Indian Tribes in the management and monitoring of cultural resources? How would the BLM and USFS manage multiple uses within the BENM without hindering access to or use of American Indian Tribes' traditional, ceremonial, and medicinal resources?
Fire management	How would land management decisions in the BENM affect fire management, fuel loading, and risk of wildfires?
Lands and realty	How would the BLM and USFS manage the issuance of new rights-of-way (ROWs) and Special Use Authorizations to allow for the proper care and management of Monument objects and values?
Lands with wilderness characteristics (BLM)	How should lands with wilderness characteristics within the BENM be managed?
Livestock grazing	How would management of other resources and resource uses affect livestock grazing within the BENM?
Paleontological and geological resources	What management actions are necessary to provide for the proper care and management of the paleontological and geological objects and values of the BENM?
Recreation	How would the BLM and USFS provide both private and commercial recreational access to the BENM while providing for the proper care and management of other Monument objects and values? How would limitations on certain types of recreational access applied to provide for the proper care and management of Monument objects and values affect certain types of recreational experiences in the BENM?
Riparian, wetland, and water resources	How would management of other resource uses in the BENM affect riparian areas, wetlands, and water resources?

Resource Topic	Issues
Soil resources	How would management of other resource uses in the BENM affect soils including soil crusts, soils sensitive to erosion, and other sensitive soils?
Social and economic considerations	How would land management decisions provide for and affect opportunities for local economic development including tourism, livestock grazing, and other uses?
Special designations	How would existing ACECs and their identified relevant and important values be managed?
Special status species	How would management of other resource uses in the BENM affect special status species and their habitats? What management actions are necessary to provide for the proper care and management of Monument objects and values related to special status species?
Travel and transportation management	Are changes to existing off-highway vehicle (OHV) use area designations or mechanized access necessary to provide for the proper care and management of Monument objects and values? How would changes to existing OHV use area designations affect opportunities for OHV access and recreation within the BENM?
Vegetation	How would land management decisions and other resource uses in the BENM affect vegetation resources, including the potential for the introduction and spread of invasive and noxious species?
Visual resources and night skies	How would management of other resource uses in the BENM affect scenic quality and integrity? How would management of other resource uses in the BENM affect the visibility of night skies? How would the BLM and USFS manage visual resources in the BENM to provide for the proper care and management of Monument objects and values related to scenery?
Wildlife and fisheries	How would management of other resource uses in the BENM affect wildlife and fish and their habitats? What management actions are necessary to provide for the proper care and management of Monument objects and values related to fish and wildlife?
Forestry and woodlands	How would forests and woodlands be managed to provide for the needs of local communities while providing for the proper care and management of Monument objects and values?

1.5. Issues Considered but Not Analyzed in Detail

The BLM and the USFS are only required to analyze issues that respond to the purpose and need or when associated with significant effects. As part of the planning process for the BENM, the BLM and the USFS identified several issues that do not meet these criteria. These resource topics and issues considered but dismissed from detailed analysis in this EIS are listed in Table 1-2, along with the rationale for dismissal.

Table 1-2. Issues Dismissed from Detailed Analysis

Resource Topic	Rationale for Dismissal from Detailed Analysis
Minerals	The issue/concern is the potential impacts resulting from mineral exploration and development in the BENM. Proclamation 9558, as modified by Proclamation 9681, withdrew all Federal lands within the BENM from all forms of entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the USFS, from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the Monument. Therefore, no mineral exploration or development would occur within the Planning Area except pursuant to valid existing rights. There are no authorized mineral leases, exploration, development, or production operations on Federal lands within the BENM. A total of six unpatented placer mining claims are located on Federal lands within the Shash Jáa Unit. An operator must attain the stated level of protection or reclamation required by specific laws in BLM- and USFS-administered National Monuments pursuant to regulations at 43 CFR 3809.415(c). Because all Federal lands within the BENM are withdrawn from mineral entry, no significant effects from mineral entry are anticipated and this issue is dismissed from detailed analysis.
Public health and safety	The issue/concern is the potential impacts on public health and safety resulting from the MMPs. Consistent with national policy, the BLM and USFS will continue to work to identify and address all abandoned mine lands sites on public lands. Few mining claims and abandoned mine lands occur in the BENM. Other substantial impacts on public health and safety are not anticipated to occur as a result of the development of the MMPs. Impacts on public health and safety would be considered in subsequent implementation-level NEPA analyses as determined appropriate by the BLM and USFS. Because no significant effects to public health and safety are anticipated from programmatic, planning-level decisions, this issue is dismissed from detailed analysis.
Renewable energy	The issue/concern is whether the BLM and USFS should promote renewable energy development in the MMPs. Proper care and management of Monument objects and values requires management of visual resources to maintain the existing landscape character of the Monument to the extent possible. None of the BENM Planning Area is conducive to providing for planned renewable energy development that is compatible with proposed visual resource management. Accordingly, it is not appropriate to plan for such development within the comprehensive framework of the BLM's and the USFS's allocation of resources and management of the public lands in the BENM. Thus, this issue was dismissed from detailed analysis because it does not respond to the purpose and need for the Federal action to provide for the proper care and management of BENM objects and values. Any application for specific land use authorizations for renewable energy would be processed and analyzed at the site-specific level through the BLM ROW and USFS Special Use Authorizations processes. At this time, project-specific compatibility with the BENM MMPs would be determined.

Resource Topic	Rationale for Dismissal from Detailed Analysis
Wild and Scenic Rivers (WSRs) (BLM)	The issue/concern is whether the BLM should conduct a WSR evaluation of the rivers within the Planning Area in developing the MMPs. During the development of the Monticello RMP in 2008, the BLM conducted an evaluation of rivers within the Planning Area. The 2008 Monticello RMP found three river segments located within the Planning Area (Arch Canyon, Indian Creek, and San Juan River Segment 3) to be eligible but not suitable for inclusion in the National Wild and Scenic River System. Because they were determined to not be suitable for inclusion in the Wild and Scenic River System, the 2008 Monticello RMP determined that these three river segments would not be protected as eligible river segments. Appendix H of the 2008 Monticello RMP ROD describes the rationale for the eligibility and suitability determinations for each river segment. Conditions affecting the determination of suitability have not changed. Therefore, these river segments remain eligible but not suitable within these MMPs. Analysis of impacts to the identified outstandingly remarkable values (e.g., fish habitat, scenery, and recreation) of these segments was discussed in the 2008 Monticello RMP and will not be repeated within these plans. Because a WSR evaluation was conducted in 2008 and because conditions affecting the determination of suitability have not changed since then, a new WSR evaluation does not need to be addressed as part of the BLM's allocation of resources and management of the public lands in the BENM. Thus, this issue was dismissed from detailed analysis because it does not respond to the purpose and need for the Federal action.
WSAs (BLM)	The issue/concern is whether the BLM should modify its management of WSAs within the BENM as part of the MMPs development process. The BLM's management policy for WSAs, excluding specifically excepted cases, is to continue to manage resource uses on lands designated as WSAs in a manner that does not impair the area's suitability for preservation as wilderness. All WSAs in the BENM are currently and would remain closed to OHV use, new ROWs, and other uses that would negatively impact their suitability for wilderness designation under all alternatives. These restrictions do not apply to activities outside of the WSAs because outside activities do not impact the suitability of WSAs for preservation as wilderness. Because WSAs in the BENM are currently managed and will continue to be managed to protect the areas' suitability for preservation as wilderness, management of these areas does not need to be addressed in a comprehensive framework for the BLM's allocation of resources and management of the public lands in the BENM. Thus, this issue was dismissed from detailed analysis because it does not respond to the purpose and need for the Federal action.
Wilderness evaluation, WSRs, species of conservation concern, timber suitability (USFS)	The issue/concern is whether the USFS should conduct a wilderness evaluation, conduct a WSR eligibility study, identify species of conservation concern, or identify lands suited and not suited for timber production as part of the MMPs development process. The USFS is currently revising the 1986 Manti-La Sal LRMP under 36 CFR 219. Included in the revision process is the requirement to conduct a wilderness evaluation and a WSR eligibility study, identify species of conservation concern, and identify lands suited and not suited for timber production. These topics are being addressed by the USFS as a component of the ongoing Manti-La Sal National Forest forest-wide LRMP revision. The USFS conducted a statewide wild and scenic river evaluation in 2008 and found Whiskers Draw, Butts Canyon, Arch Canyon, and Texas Canyon Creek eligible but not suitable for recommendation for inclusion in the National Wild and Scenic Rivers System. Further results of that evaluation can be found in the *Record of Decision and Forest Plan Amendments – Wild and Scenic River Suitability Study for National Forest System Lands in Utah* (USFS 2008). Because these issues are being addressed as a component of the ongoing Manti-La Sal National Forest forest-wide LRMP revision, they do not need to be addressed in a comprehensive framework for the USFS's allocation of resources and management of the public lands in the BENM. Thus, these issues were dismissed from detailed analysis because they do not respond to the purpose and need for the Federal action.

1.6. Planning Criteria

Planning criteria establish constraints, guidelines, and standards for the planning process and help the BLM and USFS define the scope of planning and analysis. The following criteria are based on the standards prescribed by applicable laws and regulations; agency guidance; results of consultation and coordination with the public, other Federal, State, and local agencies and American Indian Tribes; analysis pertinent to the Planning Area; and professional judgment.

1. The public planning process for the MMPs will be guided by Proclamation 9558, as modified by Proclamation 9681, in addition to FLPMA, NFMA, and NEPA.
2. The planning process will recognize valid existing rights.
3. The BLM and USFS will adhere to but will not repeat or duplicate in the MMPs direction from laws, regulations, and policy or agency guidance (e.g., instructional memoranda, manuals, and handbooks).
4. Decisions made in the planning process will apply only to BLM- and USFS-administered lands and, where appropriate, split-estate lands where the subsurface mineral estate is managed by the BLM.
5. Existing WSAs will continue to be managed to prevent impairment and ensure continued suitability for designation as wilderness. Should Congress release all or part of a WSA from wilderness study, resource management will be determined by preparing an amendment to the MMP.
6. The BLM and USFS will not conduct implementation-level travel management planning and associated route inventories, assessments, or designations as part of developing the MMPs.
7. As required by the Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, the BLM and USFS will meaningfully engage with American Indian Tribes and will carefully and fully consider integrating the traditional and historical knowledge and special expertise of the Tribes. The

BLM and the USFS will also work with the Tribes to identify parameters for continued meaningful engagement that will be set forth in the MMPs.

1.7. Relationships to Other Policies, Plans, and Programs

The BLM and the USFS recognize the importance of State, Tribal, and local plans. The BLM and USFS have developed the Proposed MMPs to be consistent with or complementary to the management actions in the following plans and policies to the maximum extent consistent with Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, FLPMA, NFMA, and other applicable laws and regulations governing the administration of public lands:

- San Juan County Master Plan (San Juan County 2008)
- San Juan County Resource Management Plan (San Juan County 2017)
- Utah Wildlife Action Plan (Utah Division of Wildlife Resources [UDWR] 2015)
- State of Utah Resource Management Plan (State of Utah 2018a)

The BLM and USFS conducted a detailed review of relevant State and County plans to evaluate the consistency of the alternatives presented in the MMPs/EIS with these plans. In general, the agencies have found that the Proposed MMPs are consistent with the State and County plans. The State and County plans do not identify specific management for the Monument and were not developed using the agencies' land use planning regulations. Therefore, the Proposed MMPs may not use the specific language from the State and County plans. However, the agencies sought to develop the MMPs to be consistent with the general management described in the State- and County-wide plans, which includes providing access to the lands within the Planning Area in a responsible fashion.

The most apparent inconsistency between the management of the Monument under all of the alternatives analyzed in the MMPs/EIS and the plans listed above relates to management of mineral resources. Outside of the BENM, Federal lands in San Juan County are generally available for efficient and responsible exploration and development of mineral resources, which are maximized in the San Juan County Energy Zone. Federal lands within the Monument were appropriated and withdrawn from all forms of mineral entry, location, selection, sale, or other disposition upon designation of the Monument under Presidential Proclamation 9558, as modified by Proclamation 9681. For this reason, management of mineral resources on Federal lands in the BENM is considered inconsistent with the State and County plans because development of mineral resources within the Monument would not occur. The agencies have not identified any other inconsistencies with management of the Monument described in the MMPs, and the State and San Juan County have not notified the agencies of inconsistencies with their plans over the course of the planning process as described in 43 CFR 1610.3-2(c).

Additionally, the BLM and USFS have considered and developed the MMPs to be consistent with the applicable laws, regulations, policies, and plans listed in Appendix C: Laws, Regulations, Policies, and Plans Considered in the Development of the Monument Management Plans and Environmental Impact Statement.

1.8. Changes between the Draft MMPs/EIS and the Proposed MMPs/Final EIS

The Draft MMPs/EIS document was available for a 90-day comment period that ended on November 15, 2018. The BLM and the USFS have prepared the Proposed MMPs/Final EIS in consideration of public comments, feedback received from cooperating agencies, American Indian Tribes, and the Monument Advisory Committee, and internal BLM and USFS review of the Draft MMPs/EIS. Changes made between the Draft MMPs/EIS and Proposed MMPs/Final EIS are indicated by gray shading in Chapters 1 through 4 and Appendices A through N of the Proposed MMPs/Final EIS. The changes are summarized as follows:

- The Proposed MMPs/Final EIS describes and analyzes the impacts associated with a new alternative (Alternative E) that was developed in consideration of public comments, feedback received from cooperating agencies, American Indian Tribes, and the Monument Advisory Committee, and by combining elements of the alternatives analyzed in the Draft MMPs/EIS. Alternative E is within the range of the alternatives considered in the Draft MMPs/EIS.

- Revisions were made to the mapping and calculations associated with analysis of the impacts of woodlands/forestry decisions in the Draft MMPs/EIS. In reviewing the comments on the Draft MMPs/EIS, the BLM and the USFS identified an error in the mapping and calculations associated with the areas identified as available/unavailable for woodland and forest product harvest. The areas identified as available/unavailable for this resource use were correctly described in Table 2-16 of the Draft MMPs/EIS; however, the maps in Appendix B: Maps and calculations throughout Chapter 3 were inaccurate. The agencies have revised Table 2-16 to clarify areas available/unavailable for woodland and forest product harvest, revised the associated maps in Appendix B, and revised calculations as needed in Chapter 3 of the Proposed MMPs/Final EIS.
- A new appendix, Appendix O: Responses to Public Comments on the Bears Ears National Monument, Draft Monument Management Plans and Environmental Impact Statement, Shash Jáa and Indian Creek Units, was added to the Proposed MMPs/Final EIS. This appendix summarizes public comments received on the Draft MMPs/EIS and the BLM's and the USFS's responses to the comments received.
- A new appendix, Appendix P: U.S. Forest Service Species of Conservation Concern, was added to the Proposed MMPs/Final EIS. This appendix discusses USFS species of conservation concern in the BENM and the potential impacts on these species from the alternatives considered in the Proposed MMPs/Final EIS.
- A new appendix, Appendix Q: Proposed Plan Amendment for the Land and Resource Management Plan: Manti-La Sal National Forest, was added to the Proposed MMPs/EIS. This appendix describes the language that would be in the USFS amendment to the *Land and Resource Management Plan: Manti-La Sal National Forest.*
- A new appendix, Appendix R: U.S. Forest Service Scenic Character Descriptions, was added to the Proposed MMPs/EIS. This appendix describes the scenic character of the USFS-administered lands within the BENM to support the Scenic Integrity Objectives presented in the action alternatives in Chapter 2 of the MMPs/EIS.
- Revisions were made to clarify management actions proposed in the alternatives, acknowledge applicable existing regulations and guidance, and better address the proper care and management of Monument objects and values.
- Additional information regarding public and cooperating agency involvement, American Indian Tribal consultation, the involvement of the Monument Advisory Committee, and the agencies' efforts to engage the Shash Jáa Commission were added to Chapter 4.
- Revisions were made to the alternatives tables in Chapter 2 and analyses in Chapter 3 to correct the identification of implementation-level decisions. The BLM and USFS incorrectly identified several management actions in the Draft MMPs/EIS as implementation-level actions. "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 and USFS have determined these management actions are necessary to prevent resource damage to provide for the proper care and management of the Monument objects and values. This Proposed MMPs/Final EIS corrects the error and clarifies that there are no implementation-level decisions included as part of this planning effort.

Various other clarifications, corrections, additions, and minor revisions to the alternatives considered and the impacts analysis were made throughout the Proposed MMPs/Final EIS and the appendices to improve the discussion of the affected environment, to improve the analysis of potential impacts, to correct typographical errors, and to address comments and recommendations from the public, cooperating agencies, American Indian Tribes, and the Monument Advisory Committee.

CHAPTER 2. ALTERNATIVES

2.1. Introduction

This chapter presents alternatives for managing the BENM. To meet the purpose of and need for the plans, all action alternatives must be compatible with the proper care and management of the objects and values outlined in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. The agencies have analyzed the alternatives presented and determined that all action alternatives that were retained for detailed analysis in the MMPs/EIS would provide for the proper care and management of Monument objects and values as required by Proclamation 9558, as modified by Proclamation 9681. These alternatives also provide for a range of multiple uses to the extent that they are consistent with the proper care and management of Monument objects and values. The agencies' final decision on which alternatives to analyze in the MMPs/EIS is made by the Authorized Officer (BLM)/Responsible Official (USFS).

The approved action alternative would result in the establishment of new land use plans that amend the existing Monticello RMP to remove the BENM from the Monticello RMP Decision Area and replace the management from the Monticello RMP for the BLM-administered lands within the Monument. The USFS would use the information in the MMPs/EIS to amend the existing Manti-La Sal LRMP to guide future management of USFS-administered lands within the BENM using the USFS selected alternative for the BENM MMP, comprising all or parts of the alternatives described in Section 2.4. The USFS plan amendment is described in Appendix Q. Separate from the preparation of the MMPs, the USFS is in the process of completing a forest-wide LRMP revision. The resulting forest-wide LRMP would replace the Manti-La Sal LRMP.

Some components of the existing Monticello RMP and Manti-La Sal LRMP have been incorporated into the action alternatives where no changes are necessary to provide for the proper care and management of Monument objects and values.

The MMPs include land use planning decisions, as defined in the BLM Land Use Planning Handbook H-1601-1. Following publication of the Proposed MMPs, pursuant to BLM's planning regulations at 43 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 contained in the MMPs may protest their approval. As allowed by 36 CFR 219.59, the USFS is utilizing the BLM's administrative review processes. Following the approval of MMPs, the BLM and USFS would develop implementation-level plans, including but not limited to a cultural resource management plan, recreation area management plans, and travel and transportation management plans.

2.2. Description of the Alternatives

2.2.1. Alternative A: No Action Alternative

Alternative A, the No Action Alternative, represents existing management mandated by current land use plans for the Planning Area and consists of management decisions in the Monticello RMP and Manti-La Sal LRMP, to the extent that the agencies have determined that those decisions are compatible with Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. Section 2.4 summarizes the management actions associated with Alternative A, which is composed of management actions in the Monticello RMP, with the exception that where the Presidential Proclamations modified existing management decisions, the described management actions reflect the Presidential Proclamation direction. The Presidential Proclamations withdrew all Federal lands within the Monument from mineral entry and location, subject to valid existing rights; therefore, no minerals actions are included in Alternative A. Excepting modifications made by the Presidential Proclamations, a complete description of the management actions associated with Alternative A is contained in the Monticello RMP (pp. 54-160) and Manti-La Sal LRMP (pp. III-1 to III-97), which are incorporated here by reference.

2.2.2. Alternative B

Alternative B would apply prescriptive land and resource use restrictions, and would identify areas in the Planning Area for additional long-term protections of resource values. As with other alternatives, Alternative B provides specific direction for the management of SRMAs and RMZs. This alternative

provides guidance on the requirements for subsequent site-specific management actions, which ensures consistency but would be more prescriptive for how resources and resource uses are managed at the site-specific implementation level.

2.2.3. Alternative C

Alternative C would provide for the proper care and management of Monument objects and values by emphasizing adaptive management. This alternative provides for protections of key areas and resources while allowing for flexibility in the management of resource uses. This alternative would require the monitoring of resource impacts and the implementation of more restrictive management actions if resource impacts exceeded acceptable thresholds. Alternative C would be less prescriptive, as compared to Alternative B, about how uses and activities are managed at the subsequent site-specific implementation level while providing direction to make review of future site-specific management actions easier and more consistent.

2.2.4. Alternative D

Alternative D would provide for the proper care and management of Monument objects and values while applying fewer land and resource use restrictions and allowing for more discretion for multiple uses and review of management actions on a case-by-case basis, as compared to Alternatives B and C. Alternative D would be less prescriptive about how uses and activities are managed at the site-specific implementation level. However, it would require additional environmental reviews of individual proposals and actions to establish appropriate uses and restrictions needed to provide for the proper care and management of Monument objects and values, and to ensure consistency and compliance with management requirements.

2.2.5. Alternative E

Alternative E was developed in response to comments received on the Draft MMPs/EIS and includes elements of Alternatives A, B, C, and D. Similar to Alternative D, Alternative E would provide for the proper care and management of Monument objects and values while applying fewer land and resource use restrictions and allowing for more discretion for multiple uses and review of management actions on a case-by-case basis, as compared to Alternatives B and C. In general, this alternative would be less prescriptive regarding how uses and activities are managed at the site-specific implementation level and would rely on environmental reviews completed for individual management actions to establish appropriate uses and restrictions needed to provide for the proper care and management of Monument objects and values. However, this alternative would require additional review of proposals during implementation to ensure consistency and compliance with overall management requirements.

2.3. Alternatives Considered but Not Analyzed in Detail

When preparing an EIS, the BLM analyzes a range of reasonable alternatives. Reasonable alternatives include those that are technically and economically practical or feasible and that satisfy the purpose and need of the proposed action. The BLM may eliminate an action alternative from detailed analysis if, among other considerations, 1) it does not respond to the purpose and need; 2) it is not technically or economically feasible; 3) it is not consistent with the overall policy objectives for the area; 4) its implementation is remote or speculative; 5) it is not substantively different in design from an alternative being analyzed in detail; or 6) it would have substantively similar effects from an alternative being analyzed in detail. For the USFS, an alternative should meet the purpose and need and address one or more significant issues related to the proposed action. Because an alternative may be developed to address more than one significant issue, no specific number of alternatives is required or prescribed (36 CFR 220.5(e)). Alternatives not considered in detail may include, but are not limited to, those that fail to meet the purpose and need, are technologically infeasible or illegal, or would result in unreasonable environmental harm. As part of the planning process, the BLM and USFS identified several alternatives that do not meet the criteria for alternatives to be analyzed in detail. This section describes the alternatives that the BLM and USFS considered during the alternatives development process that were not carried forward for detailed analysis in the EIS.

A larger Planning Area: During the scoping process, comments were received that suggested the BLM and USFS should expand the Planning Area to include all Federal lands that were included in the BENM as identified by Proclamation 9558. The purpose and need for this planning effort identify the scope of this effort as establishing management for the Monument objects and values, including "objects of antiquity" and

"objects of historic or scientific interest" of the BENM that were defined by Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. This alternative was not carried forward for detailed analysis because it would not meet the BLM's and USFS's need to complete new MMPs for the Monument, which is required by Presidential Proclamation 9558, as modified by Presidential Proclamation 9681.

Restricting public visitation: During the scoping process, comments were received that suggested the BLM and USFS should close portions of the BENM to public visitation to protect Monument objects and values. Recreational access to and public enjoyment of the BENM is a Monument value, as described in Proclamation 9558, as modified by Presidential Proclamation 9681. Closing areas to public visitation was not carried forward for detailed analysis because it would not be consistent with promoting the values associated with recreational use of the Monument as described in Proclamation 9558, as modified by Presidential Proclamation 9681. The agencies are committed to working with American Indian Tribes to ensure protection of American Indian sacred sites and fragile archaeological sites eligible for or listed on the National Register of Historic Places (NRHP). In the alternatives that were carried forward for detailed analysis, the agencies have identified criteria that they would use in determining whether a site should be available for Public Use. The agencies have also developed a Cultural Resources Monitoring Framework (included as Appendix D) that provides inventory criteria and thresholds for undertaking more stringent management actions in response to monitoring. Additionally, Appendix E: Cultural Resources Allocation Criteria and Management Strategies describes management strategy options for identified cultural resource sites.

Restricting livestock grazing: During the scoping process, the agencies did not receive comments indicating that they should consider an alternative that makes all lands in the BENM unavailable to livestock grazing. However, the agencies did receive comments on the Draft MMPs/EIS that indicated the agencies should consider Monument-wide restrictions on livestock grazing and the types of range improvements that could be authorized.

During alternatives development, the agencies considered the impacts of livestock grazing on objects identified in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, as well as other natural and cultural resources, including fragile soils (e.g., biological soil crusts), riparian areas, water resources, wildlife resources, recreation, and sites listed on or eligible for the NRHP. To address those impacts, the agencies developed a range of alternatives with respect to areas that are available (BLM)/suitable (USFS) or unavailable (BLM)/not suitable (USFS) for livestock grazing. Under Alternatives C, D, and E, there would be minor changes in the numbers of acres available (BLM)/suitable (USFS) to livestock grazing, whereas Alternative B would provide for a substantial reduction (46,275 acres or 64% of the Indian Creek Unit and 42,289 acres or 33% of the Shash Jáa Unit). Moreover, the agencies have considerable discretion through their grazing regulations to determine and adjust stocking levels, seasons of use, and grazing management activities on a site-specific level to avoid or minimize conflicts between livestock grazing and other resources and resource uses.

A determination of rangeland health has not been made for every allotment in the Planning Area; however, in areas that have been studied (approximately 84,137 BLM acres), approximately 64,691 acres (77%) meets rangeland health standards, suggesting that grazing can occur while soil/site stability, hydrologic function, and biotic integrity are maintained. Where rangeland health standards are not being met, historic and discontinued grazing practices and persistent drought have been identified as the primary causal factors.

In total, there are 13 BLM allotments (four in the Indian Creek Unit and nine in Shash Jáa Unit) and three USFS allotments that overlap the Monument. However, no allotment is located entirely within the Planning Area because the Monument boundaries are not coincident with allotment boundaries. Of the BLM allotments that have been assessed (the Comb Wash, Hart Point, Harts Draw, Lake Canyon, Lone Cedar, Perkins North, Perkins South, Slickhorn, Tank Bench – Brushy Basin, and White Mesa allotments), only two (Comb Wash and Harts Draw) are not meeting rangeland health standards as a result of drought and past improper grazing practices. All USFS allotments demonstrate a stable to upwards trend in range health. Additional information regarding rangeland health can be found in the *Bears Ears National Monument: Monument Management Plans and Environmental Impact Statement, Shash Jáa and Indian Creek Units, Analysis of the Management Situation* (hereafter referred to as the AMS) (BLM 2018a).[1]

[1] The AMS is referred to frequently throughout Chapter 3 of this EIS, and therefore the author-date citation is provided here at first mention only.

Under Alternative B, portions of the Comb Wash Allotment within the BENM would be unavailable for livestock grazing. Despite having not been grazed since 2002, this allotment is not meeting rangeland health standards. This allotment also has recreational, riparian, and cultural resource conflicts that have been addressed, in part, by making the five side canyons of Comb Wash unavailable to grazing in previous decisions. Approximately 29,551 BLM acres, or 45% of the Comb Wash allotment, is included in the BENM.

In the Indian Creek Unit, Harts Draw, which is located mostly outside of Indian Creek Canyon in upland areas along the eastern edge of the Monument boundary, is the only assessed allotment not meeting rangeland health standards. The BLM did not consider eliminating livestock grazing from the portions of the Harts Draw allotment located in the BENM under any alternatives for multiple reasons: 1) during the assessment process, it was determined that the area is making progress toward meeting rangeland health standards; 2) there are fewer recreation and cultural resource conflicts in this area; 3) the portions of the allotment inside the main Indian Creek Canyon are restricted to livestock trailing only; and 4) adjustments in livestock grazing can be made on an annual basis or during permit renewal to address unresolved issues.

Most of Indian Creek Canyon is included in the Indian Creek allotment, which has not yet been assessed by the BLM for rangeland health. This allotment (of which approximately 52,807 acres, or about 23%, is located within BENM) is held by The Nature Conservancy, which has large private inholdings along Indian Creek, including the Dugout Ranch and the Canyonlands Research Center. Recreational use in Indian Creek Canyon has increased consistently since the late 1990s, and the primary recreational uses include climbing, OHV use, and dispersed and campground camping. Livestock grazing use and increases in recreation can result in conflict in the Indian Creek Unit. Therefore, under Alternative B, the BLM is considering eliminating livestock grazing from most pastures that are wholly contained within the Monument (approximately 46,000 acres), including those areas where camping and climbing are prevalent, to reduce potential conflicts.

Managing the entire BENM as Visual Resource Management (VRM) Class I: During the comment period on the Draft MMPs/EIS, the agencies received public comments indicating that agencies should consider including an alternative that would consider managing the entire BENM as BLM VRM I/USFS Scenic Integrity Objective (SIO) Very High. All of the action alternatives considered in the MMPs/EIS would manage the entire BENM as VRM I/USFS SIO Very High and VRM II/USFS SIO High. The agencies determined that managing the entire BENM as VRM I/USFS SIO Very High and VRM II/USFS SIO High accomplishes the purpose of the planning effort to provide for the proper care and management of Monument objects and values, including the scenery and scenic quality in the BENM. The management objective of both VRM classes is to retain the existing character of the landscape and to not attract attention, while the frame of reference for meeting the USFS SIO levels is that a landscape character 'is' intact or 'appears' intact such that deviations are not evident. Due to the similarity in management objectives and frames of reference, a landscape managed as VRM I/SIO Very High or VRM II/SIO High would be similar in character. As such, this alternative was not retained for detailed analysis because it would have similar impacts to the action alternatives already being analyzed in detail in the EIS.

2.4. Alternatives Analyzed in this EIS

This section summarizes and compares how management associated with the issues identified during scoping varies among the alternatives (Tables 2-1 through 2-6 and Tables 2-10 through 2-16). The BLM and the USFS have considered management actions that are intended to protect, preserve, and restore Monument objects and values and to reduce conflict or minimize impacts on each resource or resource use.

Management restrictions such as prohibitions described in the alternatives below may require subsequent agency administrative action to enforce fully. These actions include closures or prohibitions on activities that would not be allowed. For the BLM this could mean the development of supplemental rules as per 43 CFR 8365.1-6 to support 43 CFR Subpart 8365 "Rules of Conduct" to provide for protection of persons and public lands and resources. If applicable, these BLM supplemental rules would be subject to appropriate NEPA analysis. For the USFS, any activity identified as "prohibited" or "not allowed" in the alternatives below would be prohibited on USFS-administered lands either because the activity falls under USFS General Prohibitions under 36 CFR 261 Subpart A or the USFS may issue a subsequent an order to restrict or prohibit the activity under 36 CFR 261 Subpart B. If applicable, these prohibitions or closures would be subject to appropriate NEPA analysis.

2.4.1. Cultural Resources

2.4.1.1. GOALS AND OBJECTIVES

- Identify and evaluate cultural resources, especially within areas of increased visitation and visibility.
- Identify and evaluate potential traditional cultural properties (TCPs), American Indian sacred sites, cultural landscapes, and traditionally significant vegetation and forest products.
- Identify an appropriate site as a ceremonial ground and Tribal learning center for permitted gatherings, and facilitate the use of other sites for ceremony on a case-by-case basis.
- Manage cultural resources in collaboration with American Indian Tribes as stated in Presidential Proclamation 9558, as amended by Proclamation 9681, for present and future generations in ways consistent with their scientific, educational, recreational, and traditional American Indian uses.
- Manage cultural resources to ensure that the region's historical features and irreplaceable components are adequately protected consistent with the protection, preservation, and enhancement of Monument objects and values.
- Manage natural resources important to American Indian Tribes for cultural uses.
- When permitted collection of archaeological objects for protection or scientific research occurs, the agencies would curate those objects in local museums and/or provide them for local exhibit when possible.
- Educate recreational users on methods to avoid and reduce impacts to sensitive cultural resources.
- Provide for interpretation and education of the public about cultural resources important to the objects and values of the Monument.
- Provide for use by American Indians and affected communities of potential TCPs, American Indian sacred sites, cultural landscapes, and traditionally significant vegetation and forest products.
- Collaborate with American Indian Tribes to educate Special Recreation Permit (SRP) holders and participants about the cultural history of the Monument, backcountry site visitor etiquette, and stewardship.
- Collaborate with the State of Utah, San Juan County, and American Indian Tribes on the administration of the BENM, including coordinating law enforcement efforts.

2.4.1.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Agencies would allocate cultural resources to Scientific Use, Traditional Use, Public Use (Developed), or Public Use (Undeveloped) categories, as appropriate. Appendix E provides the criteria for allocating sites and management for those allocations.
- An activity-level cultural resources management plan would be developed within 2 years of the completion of these MMPs in coordination with Tribes, the Monument Advisory Committee, the Shash Jáa Commission or comparable entity, consulting parties, cooperating agencies, and other interested stakeholders. The cultural resources management plan would provide site-specific, implementation-level direction to effectively manage recreation and other uses while protecting the integrity of significant cultural resources. This plan would include the following:
    - Standard methods for identifying and evaluating cultural resources including TCPs, American Indian sacred sites, cultural landscapes, and traditionally significant vegetation and forest products
    - A detailed monitoring and mitigation plan for cultural resource sites allocated to Public Use (Developed or Undeveloped)
    - Coordination with the Monument Advisory Committee, Tribes, the Shash Jáa Commission, consulting parties, cooperating agencies, and recreational and volunteer groups to assist with monitoring, education, and interpretation
    - An interpretation plan that identifies types of sites meeting education goals, including suitability of sites allocated to Developed Public Use and consideration of sites to add or drop from the Developed Public Use allocations
    - Site-specific criteria for addressing SRP applications requesting visitation to cultural resource sites
    - Identification of criteria for sites and areas in need of stabilization and protective measures (e.g., fences and/or surveillance equipment)
- Protective measures would be established and implemented for sites, structures, objects, and traditional use areas that are important to Tribes with historical and cultural connections to the land to maintain the viewsheds and intrinsic values, as well as the auditory, visual, and aesthetic settings of the resources. Protection measures for undisturbed cultural resources and their natural settings would be developed in compliance with regulatory mandates and American Indian Tribal consultation (Appendix F: American Indian Tribal Collaboration Framework).
- The agencies would proactively reduce hazardous fuels or mitigate the potential hazard around archaeological and cultural sites that are susceptible to destruction by fire from prescribed or wildfire. Management response to fire would follow guidelines described Section 2.4.2 and in current implementation fire management planning documents.
- Recreation use of domestic pets and pack animals would not be allowed in cultural resource locations listed on or eligible for the NRHP with the exception of historic roads and trails. Where problems occur, the agencies would evaluate posting signs to notify visitors of restrictions.
- Camping would not be allowed within historic and prehistoric structures.
- Campfires would not be allowed in archaeological sites.
- Ropes and climbing aids would not be allowed to access cultural sites (including archaeological resources) unless used for scientific purposes with a permit, for Tribal administrative access, or for emergencies.
- Cultural sites may be closed to visitation when they are determined to be at risk or pose visitor safety hazards.
- As funding is available, the agencies would conduct Class III cultural resource inventories in a manner that complies with Section 110 of the National Historic Preservation Act (NHPA) and Section 14 of the Archaeological Resources Protection Act (ARPA). Priorities for inventory include the following (in this order):
    - Group 1: Areas that receive heavy public use and/or those that lack intensive inventory in relation to current standards
    - Group 2: Areas that need records clarification or updating
    - Group 3: Areas with little or no previous inventory

These inventory priorities may change in response to changing conditions; uses and input from researchers, educators, and Tribes; or other changed circumstances such as changes in travel management implementation guidelines. Inventory and site documentation would conform to the standards listed in BLM Manual 8100; the agencies would also allow the use of additional field recording protocols in response to research goals and designs, special management, and/or other needs as identified in the future.

- Collaborate with American Indian Tribes to allocate cultural resources to uses. Within RMZs that have a frontcountry focus (see Appendix G: Recreation and Visitor Services Management Framework), work with the Tribes to allocate other public sites that would be categorized as either Developed Public Use or Undeveloped Public Use for sites that allow a sense of discovery. Within RMZs that have a backcountry focus, sites would generally be categorized as Scientific Use, Traditional Use, Public Use (Undeveloped). These allocations would be consistent with recreational outcome-based goals and objectives for these RMZs. Additional criteria for future allocation of sites are provided in Appendix E.
- The agencies would allocate the following cultural sites as Public Use (Developed) because they are designated as Public Use, are currently managed as Public Use sites, or are currently subject to high visitation:
  - Butler Wash Developed Roadside
  - Mule Canyon Kiva
  - River House
  - Butler Wash Panel
  - Arch Canyon Great House complex
  - House on Fire
  - Moon House
  - Doll House
  - Hole-in-the-Rock Trail/San Juan Hill
  - Butler Wash Dinosaur Track Site
  - Big Kachina Panel
  - Salvation Knoll
  - Newspaper Rock
  - Shay Canyon
- Agencies would continue to consult with Tribes, the Shash Jáa Commission or comparable entity, the Monument Advisory Committee, and the public, as appropriate, to add or remove sites to this list as necessary. Criteria for future allocation of sites are provided in Appendix E.
- The agencies shall meaningfully engage the Shash Jáa Commission or, should the Commission no longer exist, the Tribal governments through some other entity composed of elected Tribal government officers (comparable entity), in the management of the Monument. To that end, if the management plans should be revised, the agencies shall carefully and fully consider integrating the traditional and historical knowledge and special expertise of the Commission or comparable entity. If the agencies decide not to incorporate specific recommendations submitted to them in writing by the Commission or comparable entity, they would provide the Commission or comparable entity with a written explanation of their reasoning.

2.4.1.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-1. Alternatives for Cultural Resources

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	No similar action	All climbing routes, trails, and access points open. As part of the cultural resource monitoring and mitigation plan in the cultural resources management plan, the agencies would survey and monitor popular routes with potential to impact cultural resources. The agencies would consult and resolve any identified adverse effects to historic properties as per 36 CFR 800. Resolving management actions could include closing or rerouting climbing routes, trails, and access points to avoid or reduce impacts to significant cultural resources or, if closure or rerouting is not practicable, implement mitigation to avoid significant impacts to site integrity.	Same as Alternative D	All climbing routes, trails, and access points open. However, if survey and monitoring information gathered proactively or through site clearances indicates impacts to significant cultural resources, the agencies would consult and resolve any identified adverse effects to historic properties as per 36 CFR 800. Resolving management actions could include the following: Educate climbers on potential climbing impacts to cultural resources and how to “tread lightly” and/or self-regulate to avoid impacting these resources. Work with climbing organizations and SRP/SUP holders to increase volunteer monitoring and to educate climbers. If impacts continue, close or reroute climbing routes, trails, and access points to significant cultural resources.	All access points, trails, and climbing routes would continue to be open. However, if monitoring information indicates impacts to cultural resources, the agencies would consult and resolve any identified adverse effects to historic properties as per 36 CFR 800. Resolving management actions could include the following: Educate visitors on potential impacts to cultural resources and how to “tread lightly” and/or self-regulate to avoid impacting these resources. Work with visitors, organizations, and SRP/SUP holders to increase volunteer monitoring and to educate users. If impacts continue, the BLM would close or reroute access points, trails, and climbing routes to avoid or reduce impacts to cultural resources or, if closure or routing is not practicable, implement mitigation to avoid significant impacts to site integrity.
X		Shay Canyon Hiking limited to designated trails except for side canyons	Shay Canyon Same as Alternative D with the following exception: The BLM would reroute or close trails that impact cultural site integrity.	Shay Canyon Same as Alternative D with the following exceptions: If monitoring indicates impacts to cultural site integrity (see management above), the BLM may harden, reroute, or close trails or develop viewing platforms as necessary to protect sites. The BLM would provide education or interpretation to inform recreational users of the importance of not impacting cultural sites.	Shay Canyon Hiking trails would continue to be open for public use. Development of hiking trails would be allowed consistent with maintaining Monument objects and values and in consultation with American Indian Tribes.	Shay Canyon Hiking would be limited to designated trails and hiking trails would continue to be open to casual use. Management and development of hiking paths and trails would be consistent with maintaining Monument objects and values, including protection of cultural resources. The BLM would provide education or interpretation to inform recreational users of the importance of not impacting cultural resources. If monitoring indicates impacts to cultural resources, the agencies may harden, reroute, or close trails as necessary to protect sites.

2.4.2. Fire Management

2.4.2.1. GOALS AND OBJECTIVES

- Maintain or increase existing level of vegetation treatments. Treatment priorities would be identified to make progress in moving areas in Vegetation Condition Class (VCC) III to II, and VCC II to I.
- For vegetation cover types in proper functioning condition (PFC), use fire management as necessary to maintain that PFC.

2.4.2.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Wildland fire would be utilized to protect, maintain, and enhance resources, and, when possible, would be allowed to function in its natural ecological role.
- Hazardous fuels reduction treatments would be used to restore ecosystems; protect human, natural, and cultural resources; and reduce the threat of wildfire to communities.

- Protection of human life would be the primary fire management priority. Establishing a priority among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources would be based on human health and safety, the values to be protected, and the costs of protection. Fire management decisions and actions would consider the following:
  - Protection of cultural resources and/or cultural landscapes
  - Maintaining existing healthy ecosystems
  - High-priority subbasins or watersheds, including watersheds that are impaired or that support important natural or cultural resources
  - Habitat needs of threatened, endangered, or special status species
  - Protection of recreation sites
  - Protection of property
- Management of wildfires to meet resource objectives is authorized in the Planning Area. Consideration of ongoing management decisions and other natural changes would direct periodic reassessment of Desired Wildland Fire Condition (DWFC) and determination of potential areas for wildland fire use. Operational management of wildland fire use is described in the *Moab District Fire Management Plan* (FMP) (BLM 1998 as amended). The fire management plan identifies fire management units that may have the potential for wildland fire use.
- Wildfires may be managed to meet resource objectives except when the following resources and values may be negatively impacted and there are no reasonable resource protection measures to protect such resources and values:
  - Areas known to be highly susceptible to post-fire cheatgrass (Bromus tectorum) or invasive weed invasion
  - Important terrestrial and aquatic habitats
  - Riparian habitat
  - Non-fire-adapted vegetation communities
  - Sensitive cultural resources
  - Areas of soil with high or very high erosion hazard
  - Administrative sites
  - Developed recreation sites
  - Communication sites
- Fuels treatment: Fuels treatments would be focused on the DWFC of restoring VCC regimes to ecosystems when feasible, so that future wildfires can be more easily managed. Unless otherwise prohibited in these alternatives, fuels management decisions may include the following activities:
  - Mechanical treatments such as mowing, chopping, or chipping/grinding (with a brush cutter), chaining, tilling, cutting, or extraction
  - Prescribed fire, including broadcast, underburn, and handpile burning
  - Chemical spraying or biological treatments such as insects or goats/sheep/cattle
  - Seeding, including aerial or ground application (manual or mechanical)
  - Manual treatments, such as thinning, piling, lop and scatter, utilizing manual tools and chainsaws, and planting
- A Normal Year Fire Stabilization and Rehabilitation Plan for the Moab Fire District is in place to meet the Emergency Stabilization & Reclamation (ES&R) program needs and to comply with up-to-date ES&R program policy and guidance. The Normal Year Fire Stabilization and Rehabilitation Plan is a programmatic implementation plan authorizing treatment options specific to vegetative communities and dependent upon post-wildland fire conditions and other site-specific considerations. Treatment actions that are designed according to the type and severity of wildfire impacts and priorities include, but are not limited to, areas where the following criteria apply: it is necessary to protect human life and safety as well as property; unique or critical cultural and/or historical resources are at risk; it is determined soils are highly susceptible to accelerated erosion; perennial grasses and forbs (fire-tolerant plants) are not expected to provide soil and watershed protection within 2 years; there is a need to establish a vegetative fuel break of less flammable species (greenstrips); unacceptable vegetation, such as noxious weeds, may readily invade and become established; shrubs and forbs are a crucial habitat component for wintering mule deer or other special status species; or stabilization and rehabilitation are necessary to meet MMP objectives.
- Fire suppression in wilderness areas, inventoried roadless areas (IRAs), WSAs, and lands managed for the protection of wilderness characteristics would be through “light-on-the-land” techniques or minimum impact suppression tactics as per BLM Manuals 6320, 6330, and 6340 and Forest Service Manuals 1925, 2324, and 2326.
- Fuels work would only be allowed in the Dark Canyon Wilderness if it were determined to be the minimum required action for managing the wilderness character of the area.
- Fuels work would be allowed in the Dark Canyon Wilderness only if it were determined that it would maintain or enhance wilderness characteristics.
- Fuels work in the Arch Canyon IRA would be consistent with the 2001 Roadless Rule (36 CFR 294).

2.4.2.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-2. Alternatives for Fire Management

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	No similar action	Same as Alternative D except that for the following sites, treatments would be confined to hand treatments and chemical methods only: Wildland urban interface (with exception for pile/slash burning) Fire-vulnerable historic properties and localities listed on or eligible for the NRHP Areas within designated buffers of nesting raptors as per *Best Management Practices for Raptors and Their Associated Habitats in Utah* (Appendix H) Areas managed for protection of wilderness characteristics	Fuels management in the Planning Area would be confined to those areas where it would be necessary to protect human life and property, sensitive cultural resources, and ecosystem function. Treatment methods would be identified on a project-specific basis at the implementation level.	Fuels management decisions would be allowed throughout the Planning Area with the following restrictions: All prescribed burns would require coordination with agency biologists to ensure compliance with the Migratory Bird Treaty Act (MBTA) and Endangered Species Act (ESA). Cultural sites within planned treatment areas would be pretreated with a variety of methods to reduce fuels before the use of prescribed fire. Prescribed fire would not be used to treat camping or other high use areas during times of high use.	Fuels management decisions would be allowed throughout the Planning Area with the following restrictions: Cultural sites within planned treatment areas would be pretreated with a variety of methods to reduce fuels before the use of prescribed fire. Prescribed fire would not be used to treat camping or other high use areas during times of high use. All prescribed burns would require coordination with agency biologists to ensure compliance with the MBTA and the ESA.
X	X	No similar action	No chaining treatments would be allowed in the Planning Area (chaining refers to the practice of dragging a heavy chain between tracked heavy equipment to break off or uproot woody vegetation).	Chaining would be allowed only in those areas where the agencies have determined that it would be consistent with the protection, preservation, and restoration of Monument objects and values.	Chaining treatments would be allowed in areas that had been previously chained.	Mechanical treatments would be allowed only in those areas where the agencies have determined that it would be consistent with the proper care and management of Monument objects and values.

2.4.3. Lands and Realty

2.4.3.1. GOALS AND OBJECTIVES

- Acquire and maintain access to public lands to improve management efficiency, facilitate multiple use, and promote the public's enjoyment of these lands in coordination with other Federal agencies, State and local governments, and private landowners.

2.4.3.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Minimum impact filming criteria: Filming would be allowed in all areas, provided the following criteria are met:
  - The project would not adversely impact sensitive habitat or species.
  - The project would not adversely impact American Indian sacred site(s) nor adversely affect NRHP-eligible sites.
  - The project would not involve use of pyrotechnics more than a campfire in an appropriate setting.
  - Filming would be allowed in all areas, provided impacts to land, air, or water can be avoided, mitigated, or reclaimed and all regulatory requirements can be met (e.g., Wilderness Act, ESA, etc.)
  - The project would not involve use of explosives.
  - The project, if it involves use of livestock or exotic animal species, would provide certified weed-free feed for those animals and would include provisions for containment and/or capture of animals.
  - The project would not involve extensive restriction of public access.
  - Limited filming would be allowed in areas with the following sensitive resources, provided that impacts to these sensitive resources can be avoided, mitigated, or reclaimed:
    - Historic, cultural, or paleontological sites
    - American Indian sacred sites
    - Sensitive soils
    - Air quality
    - Sensitive species or habitat
    - Relict environments
    - Wetlands, floodplains, or riparian areas
    - Water quality
    - Wildlife habitat
    - ACECs
    - Wilderness, WSAs, and lands managed to protect wilderness characteristics
  - Use of heavy equipment would be allowed, provided that any resource damage can be avoided, mitigated, or reclaimed.
  - Criteria for use of aircraft (helicopter, fixed wing, hot air balloons, excluding unmanned aerial vehicles systems [UAVSs]) would be as follows:
    - No landing or refueling would be conducted within WSAs and designated wilderness areas.
    - Use of aircraft in an area with wildlife concerns would be allowed if a survey or inventory by an approved biologist demonstrates that animals are not present or, if animals are present, aircraft use is not proposed for more than 1 day and does not exceed the frequency of two projects per 30-day period.
    - Use of aircraft in areas with high recreational use, WSAs, or areas close to residences is proposed for no more than 2 days and does not exceed the frequency of three 2-day projects per 30-day period.
    - Aircraft use proposed within 0.5 mile of any designated campground would be during low-use times (i.e., weekdays and not during major holidays between 8:00 a.m. and 6:00 p.m.)
    - Use of drones/UAVSs for filming on public lands must follow Federal Aviation Administration Civil Operations Part 107.
    - No landing, taking off, or dropping or picking up any material or supplies with a drone/UAVS or other flying apparatus, or operating aircraft within designated wilderness. Film permittees would observe Federal Aviation Administration flight advisory(s) for flying over designated wilderness.
- Additional minimum-impact filming criteria for WSAs on BLM-administered lands:
  - If the WSA is designated as Wilderness during on-going filming, the filming would cease until the BLM determines whether, and under what criteria, filming may continue.
  - The project would not involve use of more than 20 livestock in these locations. Impacts from livestock can be avoided, mitigated, or reclaimed.
  - The project would not involve 15 or more production vehicles. Vehicles would only be allowed on WSA or designated wilderness boundary roads.
  - The project would not involve more than 5 people within these areas.
  - The activity within these areas would not continue in excess of 10 days.
- No lands in the Planning Area would be available for disposal. Acquisition of lands within the Monument would be pursued with willing sellers or by donation where it would provide for the protection, preservation, and enhancement of the objects and values for which the Monument was designated and/or when it would increase access for hunting, fishing, or other outdoor recreation activities. Any acquired lands would be managed as a portion of the BENM in the same manner as adjacent lands in the BENM unless they required specific management related to Monument objects and values.
- As per BLM Manual 6330, Forest Service Manual 2300, and Congressional action, WSAs and Wilderness Areas would be exclusion areas for any ROWs (Section 501[a] FLPMA). As per the State of Utah v. Andrus, October 1, 1979 (Cotter Decision), the agencies would grant the State of Utah reasonable access to State lands for economic purposes on a case-by-case basis.
- The agencies would give land exchanges with the State of Utah priority consideration in terms of acquiring land consistent with the management of Monument objects and values.
- Landing on and taking off from existing backcountry airstrips on BLM- or USFS-administered lands in the Planning Area would be allowed.

2.4.3.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-3. Alternatives for Lands and Realty

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X		The Indian Creek Unit would be open for ROWs except for the following exclusion and avoidance areas (Map 2-2): Exclusion areas: Bridger Jack Mesa WSA Avoidance areas: Shay Canyon ACEC Lavender Mesa ACEC Newspaper Rock Site	The Indian Creek Unit would be a ROW exclusion with the exception of private land access and infrastructure (Map 2-4).	The Indian Creek Unit would be an avoidance area for ROWs except for the following exclusion areas (Map 2-6): Bridger Jack Mesa WSA Lands with wilderness characteristics managed for those characteristics under this alternative To request a ROW within the avoidance area, an applicant would be required to meet, at a minimum, one of the following criteria: The applicant can demonstrate that there is no practicable route outside of the unit. The proposed ROW would be consistent with the objects and values of the Monument. ROWs may be issued for maintenance or improvement of existing roads consistent with the proper care and management of Monument objects and values.	The Indian Creek Unit would be open for ROWs except for the following exclusion and avoidance areas (Map 2-8): Exclusion areas: Bridger Jack Mesa WSA Avoidance areas: Shay Canyon ACEC Developed recreation sites Active floodplains, riparian areas, springs, and public water reserves Lavender Mesa ACEC Criteria for requesting a ROW within an avoidance area would be the same as Alternative C ROWs may be issued for maintenance or improvement of existing roads consistent with the proper care and management of Monument objects and values	The Indian Creek Unit would be open for ROWs except for the following exclusion and avoidance areas (Map 2-8): Exclusion areas: Bridger Jack Mesa WSA Avoidance areas: Shay Canyon ACEC Developed recreation sites Active floodplains, riparian areas, springs, and public water reserves Lavender Mesa ACEC To request a ROW within the avoidance area, an applicant would be required to meet, at a minimum, one of the following criteria: The applicant can demonstrate that there is no practicable route outside of the unit. The proposed ROW would be consistent with the proper care and management of the objects and values of the Monument. ROWs may be issued for maintenance and improvement of existing roads and where necessary to access non-Federal in-holdings if the proposed ROW would be consistent with the proper care and management of objects and values of the Monument.
	X	The Shash Jáa Unit would be open for BLM ROWs and USFS Special Use Authorizations (SUAs) except for the following exclusion and avoidance areas (Map 2-1): Exclusion areas: Mule Canyon WSA Fish Creek Canyon WSA Avoidance areas: Comb Ridge RMZ San Juan River SRMA	The Shash Jáa Unit would be a BLM ROW and USFS SUA exclusion area (Map 2-3).	The Shash Jáa Unit would be a BLM ROW and USFS SUA exclusion area with the following exceptions, which would be avoidance areas (Map 2-5): Designated utility corridors UDOT highway existing ROW To request a ROW within the avoidance area, the applicant would be required to meet, at a minimum, the following criteria: The applicant can demonstrate that there is no practicable route outside of the Monument. The proposed ROW would be consistent with the objects and values of the Monument. ROWs/SUAs may be issued for maintenance or improvement of existing roads consistent with the protection of Monument objects and values.	The Shash Jáa Unit would be a BLM ROW and USFS SUA avoidance area with the following exceptions (Map 2-7): Exclusion areas: Mule Canyon WSA Fish Creek Canyon WSA Designated wilderness Open areas: Designated utility corridors ROWs/SUAs may be issued for maintenance and improvement of existing roads and where necessary to access non-Federal in-holdings so long as impacts to Monument objects and values can be avoided or mitigated.	The Shash Jáa Unit would be a BLM ROW and USFS SUA avoidance area with the following exceptions (Map 2-7): Exclusion areas: Mule Canyon WSA Fish Creek Canyon WSA Designated wilderness Open areas: Designated utility corridors ROWs/SUAs may be issued for maintenance and improvement of existing roads and where necessary to access non-Federal in-holdings so long as impacts to Monument objects and values can be avoided or mitigated.
	X	Transportation and utility corridors The LUP would adopt the existing designated ROW corridors from the *Resource Management Plan Record of Decision and Rangeland Program Summary for the San Juan Resource Area, Moab District, Utah* (BLM 1991) including the Western Utility Group (WUG) updates to the Western Regional Corridor Study, Section 368 Energy Policy Act of 2005, Westwide Energy Corridor PEIS. Designate additional corridors as needed subject to physical barriers and sensitive resource values. Designated transportation and utility corridors include existing groupings of ROWs for electric transmission facilities, pipelines 16 inches and larger, communication lines, Federal and State highways, and major County road systems.	There would be no designated ROW corridors in the Planning Area.	Same as Alternative D	Retain existing designated corridors. Do not designate new corridors.	Retain existing designated corridors. Do not designate new corridors.
X	X	No similar action	Casual-use landing and takeoff of drones/UAVSs would not be allowed anywhere in the Planning Area. Use of drones/UAVSs for administrative use or permitted use would be analyzed on a case-by-case basis per U.S. Department of the Interior Operational Procedures Memorandum (OPM)-11, USFS Manual 5713.7, USFS Handbook 5709.16, and Federal Aviation Administration Civil Operations Part 107.	Same as Alternative D	Casual-use landing and takeoff of drones/UAVSs would not be allowed in the following areas in the Planning Area: Developed recreation areas All cultural resources sites that are not allocated as Public Use sites WSAs Designated wilderness Use of drones/UAVSs for administrative use or permitted use would be analyzed on a case-by-case basis per U.S. Department of the Interior Operational Procedures Memorandum (OPM)-11, USFS Manual 5713.7, USFS Handbook 5700, and Federal Aviation Administration Civil Operations Part 107.	Casual-use landing and take-off of drones/UAVSs would not be allowed in the following areas in the Planning Area: Developed recreation areas All cultural resource sites WSAs Designated wilderness ACECs Arch Canyon IRA Use of drones/UAVSs for administrative use or permitted use would be analyzed on a case-by-case basis per U.S. Department of the Interior Operational Procedures Memorandum (OPM)-11, USFS Manual 5713.7, USFS Handbook 5700, and Federal Aviation Administration Civil Operations Part 107.

2.4.4. Lands with Wilderness Characteristics

Decisions regarding lands with wilderness characteristics are BLM planning decisions and do not apply to USFS-administered lands. USFS planning decisions regarding inventoried roadless areas and other special designations are addressed in Section 2.4.10.

2.4.4.1. GOALS AND OBJECTIVES

- As appropriate, consider allowable uses consistent with the goals and objectives for managing lands for wilderness characteristics.

2.4.4.2. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-4. Alternatives for Lands with Wilderness Characteristics

Indian Creek	**Shash** Jáa	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
X	X	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.	The following areas would be managed to protect their wilderness characteristics (Maps 2-9 and 2-10): Bridger Jack (Lands with wilderness characteristics unit outside the Bridger Jack Mesa WSA) Harts Point San Juan River Road Canyon Fish and Owl Canyons Comb Ridge Shay Mountain	The following areas would be managed to protect their wilderness characteristics (Maps 2-11 and 2-12): Bridger Jack (Lands with wilderness characteristics unit outside the Bridger Jack Mesa WSA, excluding the Bridger Jack Mesa camping area) Road Canyon (portion outside RMZs) Fish and Owl Canyons (portion outside RMZs) On boundary roads and cherry-stemmed roads there would be a 100-foot setback from designated route centerlines that would not be managed for protection of wilderness characteristics.	Same as Alternative A	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.
X	X	Not applicable.	Areas managed for the protection of wilderness characteristics would be managed as follows: Designate as ROW exclusion areas. Close to construction of new roads. Designate as an OHV closed area. Allow commercial activities or recreational activities (e.g., SRPs /SUPs) that would not degrade an area's wilderness characteristics Exclude to commercial wood gathering. Designate as VRM Class I. Only hand tools or chemicals would be allowed to be used for vegetation treatments; no mechanical treatments. Restrict construction of new structures and facilities unrelated to the preservation or enhancement of wilderness characteristics or necessary for the management of uses allowed under this plan.	Areas managed for the protection of wilderness characteristics would be managed as follows: Designate as ROW exclusion areas. Close to construction of new roads. Designate as OHV limited. Allow commercial activities or recreational activities (e.g., SRPs/SUPs and commercial wood-cutting permits) that would not degrade an area's wilderness characteristics. Designate as VRM Class II. Allow vegetative treatments consistent with VRM Class II for the purpose of maintaining or restoring ecological condition or if needed to support supplemental values. Allow thinning/removal of trees, herbicide application, and prescribed fire (pile burning) in previously treated areas where it meets VRM II objectives.	Not applicable.	Not applicable.

2.4.5. Livestock Grazing

2.4.5.1. GOALS AND OBJECTIVES

- Allow for sustainable grazing that maximizes the contribution to the local community economy while providing for the protection, preservation, and enhancement of the Monument objects and values.
- Monitor rangeland conditions and adapt grazing practices as necessary to maintain or make progress toward long-term rangeland health.
- Maintain and improve existing range improvements, and consider new range improvements (including fencing, access, corrals, cattle guards, troughs, springs, wells, storage tanks, pipelines, guzzlers, and vegetation treatments) to allow for effective range management.
- Manage grazing to maintain a healthy and diverse vegetation community.
- Educate the public about avoiding conflict with livestock and manage livestock grazing to avoid conflicts with recreational users to the extent practicable.

2.4.5.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Utilization levels would continue to be the same as those disclosed in the existing Monticello RMP and Manti-La Sal LRMP:
  - For BLM-administered allotments, desired utilization levels as management guidelines for key forage species will be identified as needed to monitor use levels on an allotment-specific basis to achieve Desired Future Condition. Where utilization levels have not been established, a use level of 50% will be the management guideline (BLM 2008) until monitoring data are used to identify an appropriate utilization level for a specific area.
  - For USFS-administered allotments, proper use criteria (unless specified elsewhere in the Manti-La Sal LRMP or in an allotment management plan) for uplands are identified as 40% to 55% (season-long use), 45% to 60% (deferred rotation), and 55% to 65% (rest rotation) use of key species. Proper use criteria for riparian areas are identified as 50% to 60% (spring), 45% to 50% (summer), and 30% to 40% (fall) use or 4- to 5-inch stubble or regrowth of key species (USFS 1986).
- If monitoring indicates that domestic livestock grazing is impacting Monument objects and values, including the following resources, appropriate mitigation measures may be used to minimize those impacts:
  - Developed recreation sites
  - Cultural sites
  - Paleontological sites
  - Riparian areas, springs, and seeps
- Continue to authorize current, active, permitted grazing use where consistent with other decisions unless monitoring data or other factors indicate a need for change (e.g., increases or decreases in stocking numbers or changes in Federal land ownership).

- Develop offsite water sources where practicable to reduce impacts to riparian areas, seeps, and springs, and improve and increase grazing distribution within and across allotments. Identify grazing allotments that could benefit from improved grazing distribution and prioritize these allotments for the construction of new water sources.
- Any range improvements would avoid construction on cultural sites and would avoid creating concentrations of livestock on cultural sites.

2.4.5.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-5. Alternatives for Livestock Grazing

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X		Areas unavailable for grazing Make the following areas unavailable for grazing in the Indian Creek Unit (Map 2-14): Bridger Jack Mesa Lavender Mesa Shay Canyon ACEC limited to trailing only Indian Creek from Kelly Ranch vicinity to USFS boundary limited to trailing only Developed recreation sites (currently developed and proposed and listed in Section 2.4.7 would be unavailable for grazing) Any recreation sites additional to those listed may be unavailable for grazing without a plan amendment and would be analyzed with site-specific NEPA	The following pastures within the Indian Creek allotment would be unavailable for livestock grazing (Map 2-16). These pastures would be available for trailing to allow permittee to access private lands and other areas available for grazing: Bridger Jack Bench East, North Cottonwood Upper, Bridger Jack Mesa, North Cottonwood, Lavender, Bridger Jack North, Upper, Upper Mid, Upper Ranch 2, Upper Ranch 1, Bull 1, Bull 2, Bull 3, Davis, Corral Pocket, Titus Canyon	Same as Alternative A. Monitoring would be used to assist in meeting or making progress towards meeting Utah Rangeland Health Standards consistent with the management of Monument objects and values (Map 2-18).	The Indian Creek Unit would be available for grazing with the following exceptions, which would be unavailable for grazing (Map 2-20): Bridger Jack Mesa Lavender Mesa Shay Canyon limited to trailing only (boundary area identified for trailing and is not the Shay Canyon ACEC boundary) Indian Creek from Kelly Ranch vicinity to USFS boundary limited to trailing only. Developed recreation sites (existing and as described in Section 2.4.7) The intention for areas unavailable for grazing would be to use natural topographic features (e.g., pour-offs, canyon walls, etc.) to the extent possible to mitigate direct adverse impacts to various resources from livestock. Through plan maintenance, existing areas made unavailable may be adjusted to meet this intention. Where necessary, fencing may be used to augment natural topographical boundaries.	The Indian Creek Unit would be available for grazing with the following exceptions, which would be unavailable for grazing (Map 2-20): Bridger Jack Mesa Lavender Mesa Shay Canyon limited to trailing only (boundary area identified for trailing and is not the Shay Canyon ACEC boundary) Indian Creek from Kelly Ranch vicinity to USFS boundary limited to trailing only Developed recreation sites (existing and as described in Section 2.4.7) The intention for areas unavailable for grazing would be to use natural topographic features (e.g., pour-offs, canyon walls, etc.) to the extent possible to mitigate direct adverse impacts to various resources from livestock. Where necessary, fencing may be used to augment natural topographical boundaries. Areas made unavailable to grazing may be adjusted through plan maintenance in order to prioritize use of natural topographic features as barriers to reduce adverse impacts to resources.
	X	Areas unavailable for grazing Make the following areas unavailable for grazing in the Shash Jáa Unit: (Map 2-13): Comb Wash side canyons (Mule Canyon south of SR-95, Arch, Fish, Owl, and Road). These areas were made unavailable for grazing by court decision and are also made unavailable for grazing in this LUP. Eight side canyons of Butler Wash. Developed recreation sites (currently developed and proposed and listed in Section 2.4.7) would be unavailable for grazing. Any recreation sites additional to those listed may be unavailable for grazing without a plan amendment and would be analyzed with site-specific NEPA.	BLM-administered lands within the Shash Jáa Unit would be available for grazing and on USFS-administered lands suitable for grazing with the following exceptions, which would be unavailable (BLM) and not suitable (USFS) for grazing (Map 2-15): Nine side canyons of Butler Wash; developed recreation sites; Comb Wash Allotment within the Shash Jáa Unit; Arch Canyon, including Texas and Butts Canyons; Milk Ranch Point The intention for areas unavailable (BLM)/not suitable (USFS) for grazing would be to use natural topographic features (e.g., pour-offs, canyon walls, etc.) to the extent possible to mitigate direct adverse impacts to various resources from livestock. Through plan maintenance, existing areas made unavailable may be adjusted to meet this intention.	Same as Alternative D (Map 2-17)	BLM-administered lands within the Shash Jáa Unit would be available for grazing and on USFS-administered lands suitable for grazing with the following exceptions, which would be unavailable (BLM) and not suitable (USFS) for grazing (Map 2-19): Eight side canyons of Butler Wash Developed recreation sites Comb Wash side canyons Arch Canyon, including Texas and Butts Canyons The intention for areas unavailable (BLM)/not suitable (USFS) for grazing is to use natural topographic features (e.g., pour-offs, canyon walls, etc.) to the extent possible to mitigate direct adverse impacts to various resources from livestock. Through plan maintenance, existing areas made unavailable (BLM)/not suitable (USFS) may be adjusted to meet this intention. Where necessary, fencing may be used to augment natural topographical boundaries.	BLM-administered lands within the Shash Jáa Unit would be available for grazing and on USFS-administered lands suitable for grazing with the following exceptions, which would be unavailable (BLM) and not suitable (USFS) for grazing (Map 2-21): Nine side canyons of Butler Wash Developed recreation sites Comb Wash side canyons (Mule Canyon south of SR-95 and Arch, Fish, Owl, and Road Canyons) Arch Canyon, including Texas and Butts Canyons (USFS) The intention for areas unavailable (BLM)/not suitable (USFS) for grazing is to use natural topographic features (e.g., pour-offs, canyon walls, etc.) to the extent possible to mitigate direct adverse impacts to various resources from livestock. Where necessary, fencing may be used to augment natural topographical boundaries. Areas made unavailable (BLM)/not suitable (USFS) to grazing may be adjusted through plan maintenance in order to prioritize use of natural topographic features as barriers to reduce adverse impacts to resources. No new water developments for livestock or other improvements that would intensify or concentrate livestock use would be authorized within the South Milk Ranch Point pasture unit of the Babylon allotment. Fences that protect objects or values would still be allowed

2.4.6. Paleontological Resources

2.4.6.1. GOALS AND OBJECTIVES

- Ensure that areas that contain or are likely to contain vertebrate or noteworthy invertebrate or plant fossils and their traces are identified and evaluated prior to authorizing surface-disturbing activities or opening new areas to livestock grazing.
- Promote scientific, educational, and interpretive uses of fossils consistent with applicable laws, policies, and regulations.
- Identify, evaluate, study, interpret, and protect paleontological resources in the Planning Area.

2.4.6.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- The Planning Area would be managed to provide for the protection of paleontological resources consistent with Monument objects and values.
- All research, inventories, and monitoring of paleontological resources would be conducted in accordance with applicable laws, regulations, and policy.
- Casual collection of petrified wood would not be allowed in the Monument. Petrified wood collection is managed by the Petrified Wood Act of 1962, which established petrified wood as a mineral material under the Materials Act of 1947. The Monument has been withdrawn from all mineral entry and exploration.
- As funding is available, the agencies would conduct paleontological resources inventories in a manner that complies with the Paleontological Resources Preservation Act. Priorities for inventory include the following (in this order):

- Group 1: Areas that receive heavy public use and/or those that lack intensive inventory in relation to current standards
- Group 2: Areas that need records clarification or updating
- Group 3: Areas with little or no previous inventory

These inventory priorities may change in response to changing conditions; uses and input from researchers, educators, and Tribes; or other changed circumstances such as changes in travel management implementation guidelines. Inventory and site documentation would conform to the standards listed in BLM Manual 8270; the agencies would also allow the use of additional field recording protocols in response to research goals and designs, special management, and/or other needs as identified in the future.

2.4.6.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-6. Alternatives for Paleontology

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	On BLM lands within the Monument, recreational collectors may collect and retain reasonable amounts of common invertebrate and plant fossils for personal, noncommercial use. Surface disturbance must be negligible, and mechanized tools may not be used. National Forest System lands within the Monument are closed to casual collection: (a) Casual collecting is not allowed in 1) National Monuments within the National Forest System and 2) other National Forest System lands closed to casual collecting in accordance with this Part, other statutes, executive orders, regulations, or land use plans (b) Existing closures of certain areas to casual collecting, authorized under separate authority, remain closed under these regulations (36 CFR 291.12)	Same as Alternative D	Same as Alternative D	Collection of paleontological objects would be by permit only. No casual fossil collecting would be allowed within the Planning Area to protect paleontological resources.	Collection of paleontological objects would be by permit only. To protect paleontological resources, no casual fossil collecting would be allowed within the Planning Area.
X	X	Conduct on-site evaluation of surface-disturbing activities for all Class 5 areas and minimize impacts to paleontological resources to the degree practicable. Evaluation would consider the type of surface disturbance proposed, and mitigation would be developed based on site-specific information. The Authorized Officer (BLM)/Responsible Official (USFS) has the discretion to modify these survey requirements while still providing for the proper care and management of Monument objects and values.	Conduct on-site survey for paleontological resources prior to implementing any surface-disturbing activities for all Potential Fossil Yield Classification (PFYC) 3, 4, and 5 areas. Surface-disturbing activities would avoid significant paleontological resources or would mitigate those impacts below the level of significance. This mitigation would be developed based on site-specific survey information. The Authorized Officer (BLM)/Responsible Official (USFS) has the discretion to modify these survey requirements while still providing for the proper care and management of Monument objects and values.	Conduct on-site survey for paleontological resources prior to implementing any surface-disturbing activities for all PFYC 3, 4, and 5 areas. Surface-disturbing activities would avoid or minimize impacts to paleontological resources to the degree practicable. Where avoidance is not practicable, appropriate mitigation to reduce impacts would be developed based on site-specific survey information. The Authorized Officer (BLM)/Responsible Official (USFS) has the discretion to modify these survey requirements while still providing for the proper care and management of Monument objects and values.	Conduct on-site survey for paleontological resources prior to implementing any surface-disturbing activities for all PFYC 4 and 5 areas. Surface-disturbing activities would avoid or minimize impacts to paleontological resources to the degree practicable. Where avoidance is not practicable, appropriate mitigation to reduce impacts would be developed based on site-specific survey information. The Authorized Officer (BLM)/Responsible Official (USFS) has the discretion to modify these survey requirements while still providing for the proper care and management of Monument objects and values.	Conduct on-site survey for paleontological resources in PFYC 4 and 5 areas prior to implementing any surface-disturbing activities. Surface-disturbing activities would avoid or minimize impacts to paleontological resources to the degree practicable. Where avoidance is not practicable, appropriate mitigation to reduce impacts would be developed based on site-specific survey information. The Authorized Officer (BLM)/Responsible Official (USFS) has the discretion to modify these survey requirements while still providing for the proper care and management of Monument objects and values.
X	X	No similar action	The agencies would develop a survey and monitoring program for paleontological resources along climbing routes. If surveys indicate the presence of significant paleontological resources, the BLM would close or reroute climbing routes, trails, and access points for both casual and permitted use.	The agencies would develop a survey and monitoring program for paleontological resources along climbing routes. If surveys indicate presence of significant paleontological resources on climbing routes, the BLM would close or reroute climbing routes, trails, and access points for both casual and permitted use. If climbing routes cannot be rerouted, the BLM would provide specific education to climbers on best climbing practices to avoid or minimize impacts to paleontological resources.	Commercial guide climbing permits would require paleontological survey and clearance prior to issuance of a new permit in locations that have not previously undergone surveys or clearances. If survey indicates the potential for impacts to significant paleontological resources, the climbing route would be altered to avoid or minimize impacts.	If surveys indicate presence of significant paleontological resources on trails and access points, the BLM and USFS would close or reroute trails and access points for both casual and permitted use. If trails and access points cannot be rerouted, the BLM and USFS would provide specific education to climbers and hikers on best climbing practices to avoid or minimize impacts to paleontological resources.
X		No similar action	Same as Alternative D with the following exceptions: The agencies would reroute or close trails where their use is impacting significant paleontological resources.	Same as Alternative D with the following exceptions: If monitoring indicates impacts to significant paleontological resources, the agencies may harden, reroute, or close trails as necessary to protect sites. The BLM would provide education or interpretation to inform recreational users of importance of not impacting paleontological resources.	Shay Canyon Hiking trails would continue to be open to casual use. Development of hiking paths and trails would be allowed if they are consistent with maintaining Monument objects and values, including protection of significant paleontological resources.	Shay Canyon Hiking trails would continue to be open to casual use. Management and development of hiking paths and trails would be consistent with maintaining Monument objects and values, including protection of significant paleontological resources. If monitoring indicates impacts to significant paleontological resources, the agencies may harden, reroute, or close trails as necessary to protect sites. The BLM would provide education or interpretation to inform recreational users of importance of not impacting paleontological resources.

2.4.7. Recreation and Visitor Services

2.4.7.1. GOALS AND OBJECTIVES

- Manage, promote, and develop recreation resources while maintaining areas for other resources (e.g., wildlife and fish) and minimizing user conflicts, including providing for recreational and visitor services while ensuring the proper care and management of cultural resources.
- Manage recreation to protect human health and safety.
- Manage designated recreation areas in a manner that promotes desired use and minimizes conflicting uses.
- Develop management actions that are adaptive to recreation trends and changing demands.
- Within the identified SRMAs, manage for 1) the primary activities to achieve the identified experiences and benefits and 2) the physical, social, and operational settings within each area and the activities that occur within them (see Appendix G).
- Focus the recreation program and administer BLM SRPs and USFS Recreation SUPs to conserve the identified recreation outcomes, manage visitor use, protect recreational and natural resources, provide fair market value to the United States, and provide for the health and safety of visitors.
- Provide basic visitor services, including interpretation, information, and education in the context of the desired recreation setting.
- Throughout the life of the plan and as funding allows, evaluate visitor satisfaction on a 5-year basis using such methods as field visits, staff monitoring, and surveys. The objective is to manage recreation such that the achieved minimum visitor satisfaction rating is 80%.
- Manage the Monument to provide for the proper care and management of natural quiet that enhances recreational experiences.

2.4.7.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Developed recreation facilities would be unavailable for private and/or commercial harvest of woodland products including on-site collection of dead wood for campfires.
- No camping within 200 feet of isolated springs and water improvements to allow space for wildlife and livestock to access water.
- Ropes and other climbing aids would not be allowed for access to cultural sites (including archaeological resources), except for emergencies or administrative needs.
- Activities that have the potential for user conflict and/or that could impact public health and safety would require a permit. If detailed analysis on that activity indicates that it would conflict with Monument objects and values or would impact public health and safety, that permit would not be granted.
- Until implementation-level plans are completed, organized, commercial, and private group size would remain limited to 12 individuals for hiking to cultural sites in Comb Ridge accessed from Butler Wash.
- Until implementation-level plans are completed, commercial and private stock use group size would remain limited to 12 individuals and eight pack or saddle animals for Mule Canyon south of SR-95.
- Development of hiking paths and trails would be allowed if consistent with maintaining Monument objects and values. As part of site-specific implementation-level travel planning, redundant hiking trails and social trails would be closed and reclaimed.
- Camping fees will be charged if deemed necessary to provide facilities and services. Individual Special Recreation Permits (ISRPs) (BLM) and SUPs (USFS) for private, non-commercial Special Area use would be required following current Federal Lands Recreation Enhancement Modernization Act authority and agency permit and fee administration policy. ISRPs would be required for Moon House, Mule Canyon WSA (in-canyon), Butler Wash hiking, and Lower Fish Creek.
- USFS-administered lands within the Shash Jáa SRMA and the RMZs noted in Table 2-9 would be managed with USFS Recreation Opportunities Spectrum (ROS) categories.
- For USFS-administered lands in the Monument, construct, reconstruct, and maintain developed sites in accordance with the established ROS classification for the given area.
- An implementation-level Recreation Area Management Plan/Business Plan[2] would be developed for the BENM within 3 years following the cultural resources management plan. This implementation-level plan would restrict camping to designated sites if the following criteria apply:
    - There are conflicting resource impacts that cannot be mitigated (e.g., cultural resources, visual, wildlife impacts).
    - There are recurring issues with human waste, trash, campfires, and expanded disturbance that are best addressed through additional management.
- Certain recreational activities that are specifically called out in Proclamation 9681 but are not targeted SRMA activities would not be precluded in the Monument (unless specifically prohibited). These activities include mountain biking, hunting, and canyoneering. If there is future conflict between a targeted activity and a non-targeted activity, management actions would generally favor maintenance and enhancement of the targeted activity.
- Discharge of firearms would be prohibited in all developed recreation sites (e.g., campgrounds, trailheads, picnic areas, etc.) per 43 CFR 8365.2-5(a) and 36 CFR 261.10(d).

2.4.7.3. CRITERIA TO DETERMINE NEED FOR SRP/SUP OR LETTER OF AGREEMENT FOR ORGANIZED GROUP EVENTS AND ACTIVITIES

In addition to current BLM and USFS policies for evaluating whether an SRP/SUP is required for organized group events and activities, the criteria in Table 2-7 would be considered to determine if an SRP/SUP (as described in Table 2-8) is required or if a letter of agreement (BLM) or a non-commercial group SUP (USFS) is more appropriate. In those cases where the appropriate criteria are met, a letter of agreement from the Authorized Officer (BLM) would be used to document the decision to allow that activity. Group size thresholds for SRPs do not represent group size limits; rather, they represent a threshold at which an SRP or letter of agreement would be required. The BLM also has the discretion to deny SRP applications if they deem that those SRPs would not be consistent with proper care and management of Monument objects and values.

[2] The BLM implements a Recreation Area Management Plan/Business Plan to address implementation-level decisions regarding camping and other recreational activities. The USFS typically addresses implementation-level camping decisions, such as campsite designation, through its travel planning process. For consistency purposes, this implementation-level planning is referred to as a "Recreation Area Management Plan/Business Plan" for both the BLM and the USFS throughout the MMPs/EIS.

Table 2-7. Organized Group Event/Activity Evaluation Matrix

Resource	Letter of Agreement† Criteria	SRP/SUP Requirement Criteria
Soils, vegetation, water	The area and associated features demonstrate resilience and resistance to anticipated impacts, and there are no T& E plant species conflicts. The activity is at a developed or Public Use site, on designated routes, or in a designated dispersed camping area; and existing infrastructure and management for the activity is adequate for the protection of resources. No additional agency management is required.	Resource conflicts exist at the area and specific mitigation and/or additional agency management is required for the activity including, but not limited to, monitoring and specific mitigation or avoidance stipulations for protection of resources.
Cultural resources, paleontological resources, wildlife	Resource conflicts are not present; and/or the activity is at a developed or Public Use site, on designated routes, or in a designated dispersed camping area; and existing infrastructure and management for the activity is adequate for protection of resources. No additional agency management is required.	The activity is not at a developed or Public Use site or on a designated route; and/or resource conflicts exist at the area and specific mitigation; and/or additional agency management is required for the activity including, but not limited to, monitoring and specific mitigation or avoidance stipulations for protection of resources.
Recreation	The activity is consistent with area recreation goals and objectives and does not present additional conflict with other recreation uses. No additional agency management is required.	The activity is not consistent with area recreation goals and objectives, and/or additional agency management is required for the activity including, but not limited to, monitoring and specific mitigation or avoidance stipulations to reduce recreation conflicts.

† A letter of agreement is not an authorization to use public lands, but it is documentation of the BLM's determination that a permit is not required and that there is an opportunity for the organized group to plan its activity in a manner that does not require permit issuance and oversight, documentation that the organized group contacted and worked with the BLM in planning its activity, and an opportunity to obtain information about the activity and attribute use in the BLM's Recreation Management Information System. Non-commercial group use permits are the USFS equivalent of the BLM's letter of agreement.

Because of the detailed and unit-specific planning issues and resulting proposed recreational management, the alternatives for recreation management are organized into the following separate tables for the Indian Creek Unit and the Shash Jáa Unit.

2.4.7.4. MANAGEMENT ACTIONS BY ALTERNATIVE, INDIAN CREEK UNIT

Table 2-8. Alternatives for Recreation, Indian Creek Unit

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X		Designate the following SRMAs and ERMAs (Map 2-23); specific recreation objectives, desired recreation setting characteristics, and the management framework for each can be found in Appendix G: Indian Creek SRMA Monticello ERMA	Designate the following SRMAs and ERMAs (Map 2-23); specific recreation objectives, desired recreation setting characteristics, and the management framework for each can be found in Appendix G: Indian Creek SRMA Indian Creek ERMA	Same as Alternative B (Map 2-23)	Same as Alternative B (Map 2-23)	Designate the following SRMAs and ERMAs (Map 2-23); specific recreation objectives, desired recreation setting characteristics, and the management framework for each can be found in Appendix G: Indian Creek SRMA Indian Creek ERMA
X		Decisions REC-125 through REC-131 from the Monticello RMP address current management of the Indian Creek SRMA. These decisions are summarized as follows: Camping: Prohibited in the Indian Creek riparian corridor from Newspaper Rock to approximately 1 mile downstream of the Dugout Ranch. Campsites would be removed from the Newspaper Rock area and rehabilitated. Camping along the Bridger Jack Mesa bench would be limited to designated sites. A new campground called Shay Mountain Vista Campground would be constructed. Camping fees would be charged if deemed necessary to provide needed facilities and services. Additional camping stipulations and regulations could be implemented if monitoring data show this is necessary. Dispersed camping would be allowed in the Indian Creek Corridor, except within the established designated camping zones: Bridger Jack Mesa, Indian Creek Falls, and Creek Pasture. Camping within these zones would be limited to designated sites. Where dispersed vehicle camping would be allowed, it would be restricted to previously disturbed areas within 150 feet of designated routes. Campfires: Campfires would be restricted to fire rings where fire rings are available. In dispersed camping areas, where fire rings would not be available, campfires would be subject to Leave-No-Trace standards. No campfires would be allowed in the Lavender Mesa ACEC. The area would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Campers must bring in their own wood for campfires. A picnic area would be constructed adjacent to the Newspaper Rock parking area. Rock climbing routes in conflict with cultural resource sites would be closed. Parking areas would be developed. If new climbing routes are established, the BLM may designate a footpath to access the base of the climb to protect wildlife and raptors.	Indian Creek SRMA and Indian Creek ERMA Implementation-level travel planning in the SRMA would recognize the San Juan County OHV route system and integrate it to the extent possible in SRMA travel management and recreational goals and objectives. No competitive OHV events would be allowed. SRPs: An SRP† or a letter of agreement‡ would be required if organized event/activity group size exceeds 12 OHV or mechanized vehicles, 24 individuals, or 12 pack animals. Camping: Dispersed camping in designated areas only. A new campground called Shay Mountain Vista Campground would be constructed. Campfires: No campfires would be allowed except in designated campgrounds. Pets: Pets would be allowed in developed camping and parking lots only. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative. Human and other waste: All human waste must be packed out. All cans, trash, organic garbage, and burnable refuse including toilet paper must be carried out. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources. Target shooting: Target shooting would be prohibited.	Indian Creek SRMA and Indian Creek ERMA Implementation-level travel planning in the SRMA would recognize the San Juan County OHV route system and integrate it to the extent possible in SRMA travel management and recreational goals and objectives. No OHV competitive events would be allowed. SRPs: An SRP or a letter of agreement would be required if organized event/activity group size exceeds 18 OHV or mechanized vehicles, 35 individuals, or 12 pack animals. Camping: Until analyzed in an implementation-level plan, dispersed camping would be allowed and would be encouraged in designated sites. A new campground called Shay Mountain Vista Campground would be constructed. Campfires: Same as Alternative A until the implementation-level Recreation Area Management Plan/Business Plan is completed. Pets: Pets must be on leash at all times and kept out of archaeological sites. All pets must be collared and under human control at all times. Pets would not be allowed in or at any alcoves, rock writing sites, or other archaeological sites. Pets must not harass or harm wildlife.§ Pets must not harass visitors or other visitors' pets. Pets would not be allowed to swim in springs, pot holes, or other natural water sources. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative. Human and other waste: Visitors would be required to bury human waste 4–6 inches deep, 200 feet from any water source, and outside of developed recreation facilities. All cans, trash, organic garbage, and burnable refuse including toilet paper must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dish water must be strained and discarded 200 feet from any camps, trails, and water sources. If human waste becomes a	Indian Creek SRMA and Indian Creek ERMA Implementation-level travel planning in the SRMA would recognize the San Juan County OHV route system and integrate it to the extent possible in SRMA travel management and recreational goals and objectives. No OHV competitive events would be allowed. SRPs: An SRP or letter of agreement would be required if organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. Camping: Until analyzed in an implementation-level plan, dispersed camping allowed, encouraged in designated sites. A new campground called Shay Mountain Vista Campground would be constructed. Campfires: Same as Alternative A. Pets: Same as Alternative C except pets would be allowed off-leash, under voice control. Human and other waste: Same as Alternative C Target shooting: Same as Alternative C	Indian Creek SRMA and Indian Creek ERMA Implementation-level travel planning in the SRMA would recognize the San Juan County OHV route system and integrate it to the extent possible in SRMA travel management and recreational goals and objectives. No OHV competitive events would be allowed. SRPs: All organized events/activities must be coordinated with the BLM. In general, for all events/activities, an SRP or letter of agreement would be required if the organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. However, if monitoring indicates significant impacts to Monument objects and values, the BLM would consider adjusting group size thresholds during implementation-level planning. Camping: Until analyzed in an implementation-level plan, dispersed camping will be allowed following current management rules, and encouraged in designated sites. A new campground called Shay Mountain Vista Campground would be constructed. Campfires: Campfires would be restricted to fire rings where fire rings are available. In dispersed camping areas, where fire rings would not be available, campfires would be subject to Leave-No-Trace standards. No campfires would be allowed in the Lavender Mesa ACEC. The area would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Campers must bring in their own wood for campfires. Pets: All pets must be under human control at all times. Pets would be allowed off-leash, under voice control. Pets would not be allowed in or at any alcoves, rock writing sites, or other non-developed archaeological sites. Pet use at developed archaeological sites would be as posted. Pets must not harass or harm wildlife.§ Pets must not harass visitors or other visitors' pets. Pets would not be allowed to swim in springs, pot holes, or other natural water sources. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative. Human and other waste: All human waste must be carried out. All cans, trash, organic garbage, and burnable refuse including toilet paper must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources. Target shooting: Target shooting would generally be allowed but would be prohibited at campgrounds/developed recreation sites, petroglyph sites, and structural cultural sites. Where problem areas occur regarding target shooting, the agencies would post signs notifying visitors of restrictions and would consider implementing supplemental rules. Climbing: All access points, trails, and climbing routes open. However, if monitoring information indicates site-specific impacts, the agencies could do any of the following: Educate climbers on potential climbing impacts and how to "tread lightly" and/or self-regulate to avoid impacting these resources

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
				problem, BLM would require human waste to be packed out. Target shooting: Prohibited near cliffs, climbing walls, paleontological resources, and cultural resource sites and localities listed on or eligible for the NRHP; in WSAs within 600 feet of designated recreation sites including campgrounds; and within designated recreation sites including campgrounds, buildings, trailheads, and designated dispersed camping areas. Shooting toward natural and/or geologic features prohibited. Where problem areas occur regarding target shooting, the agencies would post signs notifying visitors of restrictions and consider implementing supplemental rules.		Work with climbing organizations and SRP/SUP holders to increase volunteer monitoring and to educate climbers If site-specific impacts exist, close or reroute access points, trails, and climbing routes
X		Bridger Jack Mesa WSA Decisions WSA-1 through WSA-10, REC-127 through REC-129, ACEC-22, and ACEC-23 from the Monticello RMP address current management of the Bridger Jack Mesa WSA. These decisions are summarized as follows: Bridger Jack Mesa area would be managed as part of the Indian Creek SRMA. Bridger Jack Mesa WSA would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Campfires would be restricted to fire rings, where available. If fire rings are not available, campfires would be subject to Leave-No-Trace principles.	Bridger Jack Mesa WSA Same as Alternative C	Bridger Jack Mesa WSA Same as Alternative D except for the following: SRPs: Competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals.	Bridger Jack Mesa WSA Same as Alternative A except for the following: SRPs: Competitive, vending, OHV and mechanized uses would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals or 8 pack animals.	Bridger Jack Mesa WSA Decisions WSA-1 through WSA-10, REC-127 through REC-129, ACEC-22, and ACEC-23 from the Monticello RMP address current management of the Bridger Jack Mesa WSA. These decisions are summarized as follows: Bridger Jack Mesa area would be managed as part of the Indian Creek SRMA. Bridger Jack Mesa WSA would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Campfires would be restricted to fire rings, where available. If fire rings are not available, campfires would be subject to Leave-No-Trace principles. SRPs: Competitive, vending, OHV and mechanized uses would not be allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals or 8 pack animals.
X		Lavender Mesa ACEC Decision ACEC-51 from the Monticello RMP addresses current management of the Lavender Mesa ACEC. These decisions are summarized as follows: No campfires Managed to limit recreation use if vegetation communities are being adversely impacted Helicopter access allowed for scientific study and heliportable equipment Excluded from private or commercial use of woodland products, including limited on-site collection of dead wood for campfires Managed to limit recreation use if relict vegetation communities are being adversely impacted	Lavender Mesa ACEC Same as Alternative D with the following exception: No helicopter or drone/UAVS access (landing or taking off) would be allowed within Lavender Mesa ACEC.	Lavender Mesa ACEC Same as Alternative D	Lavender Mesa ACEC Same as Alternative A except for the following: SRPs: Commercial use; competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals. No campfires would be allowed.	Lavender Mesa ACEC Decision ACEC-51 from the Monticello RMP addresses current management of the Lavender Mesa ACEC. These decisions are summarized as follows: No campfires Managed to limit recreation use if vegetation communities are being adversely impacted Helicopter access allowed for scientific study and heliportable equipment No helicopter or drone/UAVS access (landing or taking off) for recreational or commercial use would be allowed within Lavender Mesa ACEC Excluded from private or commercial use of woodland products, including limited on-site collection of dead wood for campfires Managed to limit recreation use if relict vegetation communities are being adversely impacted SRPs: Commercial use; competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. All organized groups/activities must coordinate with the BLM. In general, for all groups/activities, an SRP or letter of agreement would be required if an organized groups/activity group size exceeds 12 individuals.
X		Decision ACEC-57 from Monticello RMP addresses current management of the Shay Canyon ACEC. This decision is summarized as follows: With the exception of side canyons, hiking would be limited to designated trails. Campfires would not be allowed. Unavailable for private or commercial use of woodland products including on-site collection of dead wood for campfires. Closed to camping. Recreation use may be limited if cultural and paleontological resources are impacted.	Shay Canyon ACEC Same as Alternative D with the following exception: SRPs: Competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 24 individuals (day use only).	Shay Canyon ACEC Same as Alternative D with the following exception: SRPs: Competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. For all other activities an SRP or letter of agreement is required if an organized event/activity group size exceeds 35 individuals (day use only).	Shay Canyon ACEC Same as Alternative A, except for the following: SRPs: Competitive events, vending, and OHV and mechanized uses would not be allowed. For all other activities an SRP or letter of agreement is required if an organized event/activity group size exceeds 50 individuals or eight pack animals (day use only).	Shay Canyon ACEC Decision ACEC-57 from Monticello RMP addresses current management of the Shay Canyon ACEC. This decision is summarized as follows: With the exception of side canyons, hiking would be limited to designated trails. Campfires would not be allowed. Unavailable for private or commercial use of woodland products including on-site collection of dead wood for campfires. Closed to camping. Recreation use may be limited if cultural and paleontological resources are impacted. SRPs: Competitive events; vending; and OHV, mechanized, and equestrian uses would not be allowed. All commercial and organized groups/activities must coordinate with the BLM. In general, for all events/activities, an SRP or letter of agreement is required if an organized groups/activity group size exceeds 35 individuals (day use only).

† Generally, the BLM requires an SRP for organized groups if 1) there is a concern for health and safety, 2) there is a management concern for cultural or natural resources or for facilities on public lands, or 3) the organized group requires services, such as law enforcement, fire protection, onsite monitoring of resources or activities or if it requires exclusive use or other specialized management.

‡ A letter of agreement is the documentation of the BLM's determination that a permit is not required and that there is an opportunity for the organized group to plan its activity in a manner that does not require permit issuance and oversight, documentation that the organized group contacted and worked with the BLM in planning its activity, and an opportunity to obtain information about the activity and attribute use in the BLM's Recreation Management Information System.

§ Dogs may be used by hunters to legally pursue game in compliance with State law and hunting regulations.

2.4.7.5. MANAGEMENT ACTIONS BY ALTERNATIVE, SHASH JÁA UNIT

Table 2-9. Alternatives for Recreation, Shash Jáa Unit

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	X	Designate the following SRMAs and ERMAs and identify the following RMZs (Map 2-22): Cedar Mesa SRMA Comb Ridge RMZ McLoyd Canyon-Moon House RMZ San Juan River SRMA Monticello ERMA	Designate the following SRMA and identify the following RMZs (Map 2-24): Shash Jáa SRMA: Trail of the Ancients RMZ, South Elks/Bears Ears RMZ, Arch Canyon RMZ, Arch Canyon Backcountry RMZ, McLoyd Canyon-Moon House RMZ, San Juan Hill RMZ, The Points RMZ, and Doll House RMZ Designation of SRMAs and identification of RMZs are planning decisions for BLM lands. The BLM is required to make these decisions as outlined in Handbook 8320-1 and H-1601-1. The USFS is not required to make similar decisions; however, to ensure consistency in management, the goals, objectives, and concepts outlined for the SRMAs and RMZs would be applied to USFS lands in the Shash Jáa Unit. The goals, objectives, and concepts are correlated with the USFS Recreation Opportunity Spectrum (ROS) categories Semi-Primitive Motorized, Semi-Primitive Non-Motorized, and Roaded Natural.	Same as Alternative B (Map 2-24)	Same as Alternative B (Map 2-24)	Designate the following SRMA and identify the following RMZs (Map 2-24): Shash Jáa SRMA: Trail of the Ancients RMZ, South Elks/Bears Ears RMZ, Arch Canyon RMZ, Arch Canyon Backcountry RMZ, McLoyd Canyon-Moon House RMZ, San Juan Hill RMZ, The Points RMZ, and Doll House RMZ Designation of SRMAs and identification of RMZs are planning decisions for BLM lands. The BLM is required to make these decisions as outlined in Handbook 8320-1 and H-1601-1. The USFS is not required to make similar decisions; however, to ensure consistency in management, the goals, objectives, and concepts outlined for the SRMAs and RMZs would be applied to USFS lands in the Shash Jáa Unit. The goals, objectives, and concepts are correlated with the USFS Recreation Opportunity Spectrum (ROS) categories Semi-Primitive Motorized, Semi-Primitive Non-Motorized, and Roaded Natural.
Shash Jáa SRMA Note: Alternatives apply to all areas within the SRMA except where superseded by specific RMZ and WSA alternatives. The following decisions apply to the entire Shash Jáa SRMA.						
	X	Existing developed recreation sites would be maintained. New sites/facilities/trails would be developed in response to user demand, amenity value, and critical resource protection needs.	Existing developed recreation sites would be maintained. Development of new trails, sites, and recreational facilities would be avoided unless necessary to maintain the Monument objects and values and as consistent with Monument purpose as described in the Presidential Proclamations. No new OHV or mechanized trails would be developed on the Comb Ridge formation west of Butler Wash.	Existing developed recreation sites would be maintained. New sites/facilities/trails would be developed in response to user demand consistent with protecting, preserving, and enhancing Monument objects and values. No new OHV or mechanized trails would be developed on the Comb Ridge formation west of Butler Wash.	Same as Alternative C	Existing developed recreation sites would be maintained. New sites/facilities/trails would be developed in response to user demand consistent with protecting, preserving, and enhancing Monument objects and values. No new OHV or mechanized trails would be developed on the Comb Ridge formation west of Butler Wash.
	X	Decisions REC-46 through REC-79 from the Monticello RMP address management of SRMAs. A summary of the decisions related to ISRPs for private, non-commercial Special Area use are as follows: All SRMAs (Cedar Mesa, San Juan River) would be designated as Special Areas, which could require permits and payment of fees. In the Comb Ridge RMZ, a permit system would be established if necessary. ISRPs and fees currently required for Moon House, Mule Canyon WSA (in-canyon), and Lower Fish Creek.	ISRPs for private and commercial Special Area use would be required following current Federal Lands Recreation Enhancement Modernization Act authority and BLM permit and fee administration policy. ISRPs would be required for Moon House, Mule Canyon WSA (in-canyon), Butler Wash hiking, and Lower Fish Creek.	Same as Alternative B	Same as Alternative B	ISRPs for private and commercial Special Area use would be required following current Federal Lands Recreation Enhancement Modernization Act authority and BLM permit and fee administration policy. ISRPs would be required for Moon House, Mule Canyon WSA (in-canyon), Butler Wash hiking, and Lower Fish Creek.
	X	No similar action	Climbing would be prohibited on arches and hoodoos.	Climbing would be allowed on arches and hoodoos; placement of fixed hardware including bolts would be prohibited.	Climbing would be allowed on arches and hoodoos; placement of fixed hardware including bolts would be prohibited.	All access points, trails, and climbing routes open. However, if monitoring information indicates site-specific impacts, the agencies could do any of the following: Educate climbers on potential climbing impacts and how to "tread lightly" and/or self-regulate to avoid impacting these resources. Work with climbing organizations and SRP/SUP holders to increase volunteer monitoring and to educate climbers. If site-specific impacts exist, close or reroute access points, trails, and climbing routes.
	X	Pets (Cedar Mesa SRMA): No limit or fees for pets. All pets must be collared, leashed, and under human control at all times. Pets are not allowed in or at any alcoves, rock writing sites, or other sites. Pets must not harass visitors and other visitors' pets. Pets are not allowed to swim in springs, pot holes, or other natural water sources. Pet waste must be buried in a shallow hole away from trails, campsites, cultural sites, and natural water sources.	Pets: Pets would be allowed in developed areas including developed camping and parking lots only. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative.	Pets: Pets must be leashed at all times. All pets must be collared and under human control at all times. Pets would not be allowed in or at any alcoves, rock writing sites, or standing structural cultural sites. Pets must not harass or harm wildlife. Pets must not harass visitors or other visitors' pets. Pets would not be allowed to swim in springs, pot holes, or other natural water sources. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative.	Pets: All pets must be collared and under human control at all times. Pets would not be allowed in or at any alcoves, rock writing sites, or other standing structural cultural sites. Pets would be allowed off-leash under voice control outside of standing structural cultural sites unless a leash requirement is otherwise posted at the trailhead. Pets must not harass or harm wildlife. Pets must not harass visitors or other visitors' pets. Pets would not be allowed to swim in springs, pot holes, or other natural water sources. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative.	Pets: All pets must be under human control at all times. Pets would be allowed off-leash, under voice control. Pets would not be allowed in or at any alcoves, rock writing sites, or other non-developed archaeological sites. Pet use at developed archaeological sites would be as posted. Pets must not harass or harm wildlife. Pets must not harass visitors or other visitors' pets. Pets would not be allowed to swim in springs, pot holes, or other natural water sources. Pet waste disposal requirements would be identical to human waste disposal requirements for this alternative.

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	X	Human and other waste: Cedar Mesa SRMA (in-canyon only): Same as Alternative D Comb Ridge RMZ: In camp areas without toilets, human waste must be packed out.	All human waste must be carried out.	Human and other waste: Bury human waste 4-6 inches deep, 200 feet from any water source, and outside of developed recreation facilities. All cans, trash, organic garbage, and burnable refuse including toilet paper must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources. If human waste becomes a problem, a requirement to carry out human waste may be implemented.	Same as Alternative C	Human and other waste: All human waste must be carried out. All cans, trash, organic garbage, and burnable refuse including toilet paper must be carried out. Liquid garbage may be discarded 200 feet from any water source. Dishwater must be strained and discarded 200 feet from any camps, trails, and water sources.
	X	No similar action	Target shooting: Target shooting would be prohibited within the Shash Jáa Unit	Target shooting: Target shooting would be prohibited within the Shash Jáa Unit near cliffs, climbing walls, paleontological resources, historic properties, and localities listed or eligible for the NRHP, within WSAs, within 600 feet of any designated recreation site, including but not limited to campgrounds, buildings, trailheads, designated dispersed camping areas. Shooting toward significant natural and/or geologic features would be prohibited. Where problems occur regarding target shooting, the agencies would post signs notifying visitors of restrictions and would consider implementing supplemental rules.	Target shooting: Same as Alternative C	Target shooting: Target shooting would generally be allowed but would be prohibited at campgrounds/developed recreation sites, petroglyph sites, and structural cultural sites. Where problem areas occur regarding target shooting, the agencies would post signs notifying visitors of restrictions and would consider implementing supplemental rules.
	X	Within the ERMA, dispersed vehicle camping would be allowed only in previously disturbed areas within 150 feet of designated routes (on each side of a centerline). If use is such that undue environmental impacts are taking place, the BLM would close and rehabilitate damaged areas. This use would not include areas within WSAs (389,444 acres) or non-WSA areas with wilderness characteristics (88,871 acres), WSR corridors, ACECs, or threatened and endangered or special status species habitats. Where monitoring identifies resource impacts, future implementation-level plans could consider designation of specific campsites. Within Cedar Mesa SRMA, dispersed campsites would be designated. Comb Ridge RMZ would be closed to dispersed camping. Designated camping areas and campgrounds would be designated. Camping limited to these areas. For USFS-administered lands, dispersed camping would be allowed within 150 feet of a designated travel route as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map.	Dispersed camping in Shash Jáa Unit would be allowed in designated areas only. Until an implementation-level recreation area management plan/business plan is completed for USFS-administered lands, dispersed camping would be allowed within 150 feet of a designated travel route as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map.	Dispersed vehicle camping in Shash Jáa Unit would be allowed along designated routes. If monitoring indicates impacts to Monument objects and values, the agencies would close and restore impacted areas. This use would not include areas within WSAs, ACECs, or threatened and endangered or special status species habitats. Future implementation-level planning would consider additional camping designations. Until an implementation-level recreation area management plan/business plan is completed for USFS-administered lands, dispersed camping would be allowed within 150 feet of a designated travel route as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map.	Until an implementation-level Recreation Area Management Plan/Business Plan is completed, dispersed vehicle camping in the Shash Jáa Unit (including when allowed in RMZs) would be allowed along designated routes. If monitoring indicates impacts to Monument objects and values, the agencies would close and restore impacted areas. This use would not include areas within WSAs, ACECs, or threatened and endangered or special status species habitats. Future implementation-level planning would consider additional camping designations. Until an implementation-level recreation area management plan/business plan is completed for USFS-administered lands, dispersed camping would be allowed within 150 feet of a designated travel route as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map.	Until an implementation-level Recreation Area Management Plan/Business Plan is completed, dispersed vehicle camping in the Shash Jáa Unit (including when allowed in RMZs) would be allowed only in previously disturbed areas along designated routes. If monitoring indicates impacts to Monument objects and values, the agencies would consider closing and restoring impacted areas in accordance with applicable laws and policies. This use would not include areas within WSAs, ACECs, or threatened and endangered or special status species habitats. Future implementation-level planning would consider additional camping designations and limitations. Until an implementation-level recreation area management plan/business plan is completed for USFS-administered lands, dispersed camping would be allowed within 150 feet of a designated travel route as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map.
	X	The criteria for requiring an SRP include the following: Any commercial use Non-mechanized/non-stock day use organized group or event of more than 50 people in ERMA Non-mechanized/non-stock overnight with group or event of more than 25 people in ERMA More than 25 OHVs on designated routes (would not include County B Roads or State and Federal highways) More than 25 nonmotorized mechanized vehicles on designated routes (would not include County B Roads or State and Federal highways) A group size of more than 15 riding and/or pack animals Car camping with more than 15 vehicles or more than 50 people Activities or events with the potential to conflict with existing resource management guidelines/prescriptions Events with the potential for user conflict	SRMA outside of RMZs SRPs: Competitive and vending use would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 OHV/mechanized vehicles, 24 individuals, or 12 pack animals. Camping: Dispersed camping in designated areas only.	SRMA outside of RMZs SRPs: Competitive OHV events and vending use would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 18 OHV/mechanized vehicles, 35 individuals, or 12 pack animals. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites but not restricted to those sites.	SRMA outside of RMZs SRPs: Competitive OHV events and vending use would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites but not restricted to those sites.	SRMA outside of RMZs SRPs: Competitive OHV events and vending use would not be allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. However, if monitoring indicates significant impacts to Monument objects and values, the BLM would consider adjusting group size thresholds during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment. Camping: Until analyzed in an implementation-level plan or until dispersed camping sites are designated, camping would be encouraged in previously disturbed sites.

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		Events that could impact public health and safety Camping: Within Cedar Mesa SRMA, dispersed campsites would be designated. Comb Ridge RMZ would be closed to dispersed camping. Designated camp areas and campgrounds would be designated. Camping limited to these areas.				
	X	Comb Ridge RMZ: Private and commercial group size limited to 12 people. Cedar Mesa SRMA: Group size limited to 24 people for both private and commercial use (mesa top camping). Comb Ridge RMZ closed to dispersed camping. Designated camp areas and campgrounds would be designated. Camping limited to these areas.	Trail of the Ancients RMZ SRPs: No competitive events would be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 OHV/mechanized vehicles, 24 individuals, or 12 pack animals. Camping: Camping would be allowed in developed campground areas only. Target shooting would be prohibited.	Trail of the Ancients RMZ SRPs: No competitive OHV events would be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 18 OHV/mechanized vehicles, 35 individuals, or 12 pack animals. If monitoring indicates impacts to Monument object and values beyond acceptable levels, group size thresholds would be reduced during implementation-level planning. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites. Target shooting would be prohibited.	Trail of the Ancients RMZ SRPs: Competitive events may be allowed unless implementation-level analysis identifies resource or safety concerns. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 25 pack animals. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites. Trail of the Ancients RMZ south of US-163 would be managed to facilitate cultural and heritage tourism.	Trail of the Ancients RMZ SRPs: Competitive events may be allowed unless implementation-level analysis identifies resource or safety concerns. All organized events/activities must coordinate with the BLM. In general, for all events/activities, an SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 25 pack animals. However, if monitoring indicates significant impacts to Monument objects and values, the BLM would consider adjusting group size thresholds during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites. Trail of the Ancients RMZ would be managed to facilitate cultural and heritage tourism.
	X	No similar action	Arch Canyon RMZ SRPs: Competitive events and vending not allowed. An SRP or letter of agreement would be required if an organized event/activity group size exceeds 24 individuals or 12 pack animals. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites. OHV and mechanized use would not be allowed. Campfires would be allowed in designated campsites only.	Arch Canyon RMZ SRPs: Non-motorized competitive would be allowed unless monitoring shows adverse impacts to Monument objects and values. Vending would not allowed An SRP or letter of agreement would be required if an organized event/activity group size exceeds 18 OHV/mechanized vehicles, 35 individuals, or 12 pack animals. If monitoring indicates significant impacts to Monument objects and values beyond acceptable levels, group size thresholds would be reduced during implementation-level permitting. A maximum of six events would be permitted between March and May on non-consecutive weekends. Motorized and mechanized casual use would be allowed on BLM-administered lands. USFS-administered lands would be closed to OHV and mechanized use. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites.	Arch Canyon RMZ SRPs: Non-motorized competitive events would be allowed with spectators limited to areas that have been cleared for cultural and paleontological resources unless monitoring shows adverse impacts to Monument objects and values. Vending would not be allowed. An SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. OHV and mechanized casual use would be allowed on BLM-administered lands. USFS-administered lands would be closed to motorized and mechanized use. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites. Campfires would be allowed except in archaeological sites.	Arch Canyon RMZ SRPs: Non-motorized competitive events would be allowed with spectators limited to areas that have been cleared for cultural and paleontological resources unless monitoring shows adverse impacts to Monument objects and values. Vending would not be allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. However, if monitoring indicates significant impacts to Monument objects and values, the BLM would consider adjusting group size thresholds during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment. A maximum of six motorized commercial or organized events would be permitted between March and May on non-consecutive weekends. OHV and mechanized casual use would be allowed on BLM-administered lands. USFS-administered lands would be closed to motorized and mechanized use. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites and developed campgrounds but not restricted to those sites. Campfires would be allowed except in archaeological sites.
	X	In Arch Canyon, commercial OHV use would be limited to the designated route up to the National Forest boundary, a total of 8 miles one way. This permit would allow access on the designated route up to the National Forest boundary, except from March 1 through August 31. During this period, access would be limited to 7.5 miles of the designated route. Therefore, during this period OHV access would not be allowed within 0.5 mile of the National Forest boundary.	Arch Canyon RMZ Arch Canyon RMZ would be designated as an OHV closed area.	Arch Canyon RMZ A seasonal OHV access closure from March 1 to August 31 (last 0.5 mile before National Forest boundary) would apply to commercial and casual use with an annually specified turnaround point.	Arch Canyon RMZ A seasonal OHV access closure from March 1 to August 31 (last 0.5 mile before National Forest boundary) applies only to commercial use and would specify a turnaround point each year.	Arch Canyon RMZ A seasonal OHV access closure from March 1 to August 31 (last 0.5 mile before National Forest boundary) applies only to commercial use and would specify a turnaround point each year
	X	McLoyd Canyon-Moon House RMZ The McLoyd Canyon-Moon House RMZ occurs within the Fish Creek Canyon WSA and is managed under current WSA policy. In addition to this management, the following prescriptions would apply: Closed to OHV use. Develop a cultural resource management plan for McLoyd Canyon–Moon House. Public access limited via a permit system for day visits.	McLoyd Canyon-Moon House RMZ Same as Alternative D with the following exceptions: Permits would be required and managed through the Cedar Mesa permits reservation system with a limit of 20 people per day. Maximum group size would be 12 people. One commercial group per day.	McLoyd Canyon-Moon House RMZ Same as Alternative D with the following exceptions: Permits would be required and managed through the Cedar Mesa permits reservation system; 20 people per day would be allowed for private use, and 16 additional people would be allowed on commercially guided trips or tours led by BLM-trained docents. During the off-season (11/1 to 2/28 and 7/1 to 8/31), no private permits would be issued.	McLoyd Canyon-Moon House RMZ The McLoyd Canyon-Moon House RMZ occurs within the Fish Creek Canyon WSA and is managed under current WSA policy. In addition to this management, the following prescriptions would apply: Designate as an OHV closed area. Public access would be limited via a permit system for day visits. Permits required and managed through the Cedar Mesa permits reservation system; 20	McLoyd Canyon-Moon House RMZ The McLoyd Canyon-Moon House RMZ occurs within the Fish Creek Canyon WSA and is managed under current WSA policy. In addition to this management, the following prescriptions would apply: Designate as an OHV closed area. Public access would be limited via a permit system for day visits. Permits required and managed through the Cedar Mesa permits reservation system; 20 people per day allowed for private use and 16 additional people allowed on commercial guided trips or tours led by BLM-trained docents.

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		No more than 36 people allowed to visit Moon House per day. Limitations on visitation may change based on site monitoring of impacts of visitation. One commercial group per day. The number of people is included in the day use number of 36. Access to the interior corridor of Moon House would be limited to four people at any one time. Visitors would not be allowed to enter the Moon Room and adjoining rooms within Moon House. Human waste must be packed out. Camping would be limited only to the designated primitive camp and park area south of the Snow Flat Road. Camping prohibited outside of this primitive camp area. Hiking to Moon House would be limited to the designated trail. Hiking to other sites in the RMZ may also be limited to designated trails if determined necessary. RMZ would be closed to pack animals and pets. Campfires would not be allowed. Unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. McLoyd Canyon would be closed to overnight use from the head of the canyon to UTM: 607100E, 4143495N. Develop a site stewardship program to monitor site and possibly develop guided tours.		Only commercially guided trips or tours led by BLM-trained docents would be allowed.	people per day allowed for private use and 16 additional people allowed on commercial guided trips or tours led by BLM-trained docents. Maximum group size would be 12 people. Access to the interior corridor of Moon House would be limited to four people at any one time. Visitors would not be allowed to enter the Moon Room or other adjoining rooms within Moon House. Human waste must be packed out. No camping. Hiking to Moon House would be limited to the designated trail. Hiking to other sites in the RMZ may also be limited to designated trails if determined necessary. RMZ would be closed to pack animals and pets. Campfires would not be allowed. Would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. McLoyd Canyon would be closed to overnight use from the head of the canyon to UTM 607100E, 4143495N. The BLM would develop a site stewardship program to monitor site conditions.	Group sizes would be no larger than 12 people. Access to the interior corridor of Moon House would be limited to four people at any one time. Visitors would not be allowed to enter the Moon Room or other adjoining rooms within Moon House. Human waste must be packed out. No camping. Hiking to Moon House would be limited to the designated trail. Hiking to other sites in the RMZ may also be limited to designated trails if determined necessary. RMZ would be closed to pack animals and pets. Campfires would not be allowed. Would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. McLoyd Canyon would be closed to overnight use from the head of the canyon to UTM 607100E, 4143495N.
	X	San Juan River SRMA Decisions REC-49 through REC-79 in the Monticello RMP address management of the San Juan River SRMA. Decisions related to the use of the portion of the SRMA within the BENM, including San Juan River use, is as follows: River trips on the San Juan River would require an ISRP. Commercial SRPs would be issued to commercial companies on a 5-year designated basis. They would also be issued to private users through an annual lottery system. Unavailable for woodland product use, except for limited on-site collection of dead wood for campfires. Woodland use within the floodplain would be limited to collection of driftwood for campfires. Campfires would be allowed only with a fire pan. For motorized boating, downstream travel would be allowed at low, wakeless speed. Upstream travel would be prohibited, except for emergency purposes (SPM). Launch limits would allow 40,000 user/days per year. Trip size would be limited to 25 people total (including crew) for private trips. Commercial group size limits would remain at 33 people (25 passengers plus eight guides) per trip. Commercial use would be allowed up to 40% of total use. Two commercial day trips per day (one launch of 25 passengers and one launch of 10 passengers) would be allowed and are not included in the launch limits. Administrative and research use would be authorized on a case-by-case review and determination. Vehicle camping would be allowed within the San Juan SRMA only upstream of Comb Wash. In this area, dispersed vehicle camping would be allowed in previously disturbed areas within 150 feet of designated routes.	San Juan Hill RMZ SRPs: Competitive and vending use would not be allowed. For all other activities an SRP or letter of agreement is required if an organized event/activity group size exceeds 12 OHV/mechanized vehicles, 24 individuals, or 12 pack animals. A permit (ISRP) for private, non-commercial Special Area use would be required. Camping: Until analyzed in an implementation-level plan, dispersed camping would be allowed in designated areas only. Campfires would be allowed in designated campsites only with fire pan Recreational use of the San Juan River within the area previously designated as the San Juan River SRMA would be the same as under Alternative A.	San Juan Hill RMZ SRPs: Competitive and vending use not allowed. For all other activities an SRP or letter of agreement is required if an organized event/activity group size exceeds 18 OHV/mechanized vehicles, 35 individuals, or 12 pack animals. If monitoring indicates significant impacts to Monument objects and values, group size thresholds would be reduced during implementation-level permitting. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites but not restricted to those sites. Campfires would be allowed with fire pan except in archaeological sites. Recreational use of the San Juan River within the area previously designated as the San Juan River SRMA would be the same as Alternative A.	San Juan Hill RMZ SRPs: Competitive and vending use not allowed. For all other activities an SRP or letter of agreement is required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites but not restricted to those sites. Campfires would be allowed in fire pan except in archaeological sites. Recreational use of the San Juan River within the area previously designated as the San Juan River SRMA would be the same as Alternative A.	San Juan Hill RMZ SRPs: Competitive and vending use not allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities an SRP or letter of agreement is required if an organized event/activity group size exceeds 25 OHV/mechanized vehicles, 50 individuals, or 15 pack animals. However, if monitoring indicates significant impacts to Monument objects and values, the BLM would consider adjusting group size thresholds during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment. Camping: Until analyzed in an implementation-level plan, dispersed camping would be encouraged in designated sites but not restricted to those sites. Campfires would be allowed in fire pan, except no campfires allowed in archaeological sites. Recreational use of the San Juan River within the area previously designated as the San Juan River SRMA would be the same as under Alternative A.
	X	Mule Canyon WSA	Mule Canyon WSA Same as Alternative C with the following exceptions:	Mule Canyon WSA Same as Alternative D with the following exception:	Mule Canyon WSA SRPs:	Mule Canyon WSA Stock use (in-canyon) would not be allowed with the exception of stock associated with permitted livestock grazing.

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		A permit (ISRP) for private, non-commercial Special Area use would continue to be required for in-canyon day and overnight use. Group size limited to 12. In-canyon camping could be limited to certain designated areas if resource or cultural damage occurs. Dispersed vehicle camping not allowed in WSA. Campfires not allowed.	Camping: Until analyzed in an implementation-level plan, dispersed camping in designated areas only. Campfires not allowed	SRPs: Competitive events; vending; and OHV, mechanized, or stock use (in-canyon) (with the exception of stock associated with permitted livestock grazing) would not be allowed.	Competitive events; vending; and OHV, mechanized, and stock use would not be allowed. For all other activities an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals (limited to 12 individuals in-canyon). If monitoring indicates significant impacts to Monument objects and values, group size thresholds would be reduced during implementation-level planning. A permit (ISRP) for private, non-commercial Special Area use would continue to be required for in-canyon day and overnight use. Group size limited to 12. Camping: Same as Alternative A. Campfires not allowed.	SRPs: Competitive events, vending, and OHV and mechanized use would not be allowed. All organized events/activities must coordinate with the BLM. In general, for all events/activities, an SRP or letter of agreement would be required if an organized event/activity group size exceeds 12 individuals (limited to 12 individuals in-canyon). If monitoring indicates significant impacts to Monument objects and values, group size thresholds would be reduced during implementation-level planning. Any group size limits developed during implementation-level planning that exceed those described above would also require a plan amendment. A permit (ISRP) for private, non-commercial Special Area use would continue to be required for in-canyon day and overnight use. Group size limited to 12. Camping: In-canyon camping could be limited to certain designated areas if resource or cultural damage occurs. Dispersed vehicle camping not allowed in WSA. Campfires not allowed.
Decisions Applicable to USFS-Administered Lands Only						
	X	SUPs are managed according to the *Manti-La Sal Needs Assessment and Resource Capability Guidance for Recreation Special Uses* (USFS 2013).	SUPs for recreation uses on the USFS portion of the Monument would continue to be managed according to the *Manti-La Sal Needs Assessment and Resource Capability Guidance for Recreation Special Uses* (USFS 2013).	Same as Alternative B	Same as Alternative B	SUPs for recreation uses on the USFS portion of the Monument would continue to be managed according to the *Manti-La Sal Needs Assessment and Resource Capability Guidance for Recreation Special Uses* (USFS 2013).
	X	No similar action	Arch Canyon Backcountry RMZ Desired future condition on USFS-administered lands is described in Appendix G. ROS Class: SPNM Managed as an OHV closed area Closed to mechanized use Group size of 12 individuals No limit on numbers of groups Organized events: No organized OHV or mechanized events would be permitted. SIO: Very High Dispersed camping in designated areas only.	Arch Canyon Backcountry RMZ Desired future condition on USFS-administered lands is described in Appendix G. ROS Class: SPNM Managed as an OHV closed area Closed to mechanized use If monitoring indicates significant impacts from dispersed camping on Monuments objects and values, dispersed camping would be limited to designated areas only. SIO: High USFS would monitor the following: Disturbance to cultural resources Disturbance to paleontological resources Riparian/stream PFC Impacts to threatened, endangered, and sensitive species habitat (including Mexican spotted owl) Recreational satisfaction If monitoring indicates significant impacts on any of these resources, the following limitations would be implemented: Group size of 24 individuals	Arch Canyon Backcountry RMZ Desired future condition on USFS-administered lands is described in Appendix G. ROS Class: SPNM Managed as an OHV closed area Closed to mechanized use Casual and permitted use: No limit on group size (individuals) No limit on number of groups Non-motorized and non-mechanized events would be allowed. SIO: High No restrictions on camping	Arch Canyon Backcountry RMZ Desired future condition on USFS-administered lands is described in Appendix G. ROS Class: SPNM Managed as an OHV closed area Closed to mechanized use Permitted use: 12-person limit on group size (individuals) Competitive events not allowed SIO: High If monitoring indicates significant impacts from dispersed camping on Monuments objects and values, dispersed camping would be limited to designated areas only.
	X	No similar action	The Points RMZ Desired future condition on USFS-administered lands is described in Appendix G. Same as Alternative D with the following exceptions: Camping would be allowed in designated sites only. Campfires would be allowed in designated developed sites only. Milk Ranch Point would be closed to OHV use to protect cultural resources.	The Points RMZ Desired future condition on USFS-administered lands is described in Appendix G. Same as Alternative B with following exceptions if monitoring indicates adverse impacts to natural, cultural, or paleontological resources: Implementation-level planning would be developed within 3 years following cultural resources management plan. This implementation-level planning would use the following criteria for determining whether the agency should identify and restrict camping to designated dispersed campsites and/or areas. There are conflicting resource impacts that cannot be mitigated (e.g., cultural resource, visual, and wildlife impacts).	The Points RMZ Desired future condition on USFS-administered lands is described in Appendix G. The Points would be managed as Backcountry Semi-primitive motorized. SIO: High Dispersed camping would be allowed. Campfires would be allowed except in cultural sites.	The Points RMZ Desired future condition on USFS-administered lands is described in Appendix G. The Points would be managed as Backcountry Semi-primitive motorized. SIO: High Until analyzed in an implementation-level plan, dispersed camping on USFS-administered lands would be allowed as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map. After completion of an implementation-level Recreation Area Management Plan/Business Plan, camping would be allowed in designated sites only. After completion of an implementation-level Recreation Area Management Plan/Business Plan, campfires would be allowed in designated sites only. Managed as an OHV limited area.

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
				There are reoccurring issues with human waste, trash, campfires, and expanded disturbance that are best addressed through additional management.		
	X	No similar action	South Elks/Bears Ears RMZ Desired future condition on USFS-administered lands is described in Appendix G. Managed same as Trail of the Ancients above with following exceptions: Dispersed camping would be allowed in designated sites only. Campfires would be allowed in designated sites ROS Class: Roaded Natural	South Elks/Bears Ears RMZ Desired future condition on USFS-administered lands is described in Appendix G. Same as Alternative D with the following exceptions: Implementation-level planning would be developed within 3 years following cultural resources management plan. This implementation-level planning would use the following criteria for determining whether the agency should identify and restrict camping to designated dispersed campsites and/or areas. There are conflicting resource impacts that cannot be mitigated (e.g., cultural resource, visual, and wildlife impacts). There are reoccurring issues with human waste, trash, campfires, and expanded disturbance Target shooting would be prohibited.	South Elks/Bears Ears RMZ Desired future condition on USFS-administered lands is described in Appendix G. Recreation development in the Monument on USFS-administered lands would be focused here. The area provides an access point for adjacent Semi-Primitive Motorized setting found in the Points SPM. This RMZ would be managed same as Trail of the Ancients above with following exceptions: ROS Class: Roaded Natural Unrestricted dispersed camping Campfires would be allowed except in archaeological sites and during times of fire restrictions.	South Elks/Bears Ears RMZ Desired future condition on USFS-administered lands is described in Appendix G. Recreation development in the Monument on USFS-administered lands would be focused here. The area provides an access point for adjacent Semi-Primitive Motorized setting found in the Points SPM. This RMZ would be managed same as Trail of the Ancients above with following exceptions: ROS Class: Roaded Natural Until analyzed in an implementation-level plan, dispersed camping on USFS-administered lands would be allowed as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map. After completion of an implementation-level Recreation Area Management Plan/Business Plan, camping would be allowed in designated sites only. After completion of an implementation-level Recreation Area Management Plan/Business Plan, campfires would be allowed in designated sites only.
	X	No similar action	Doll House RMZ Same as Alternative D with the following exceptions: No camping would be allowed in RMZ. All use would require a permit. No commercial use would be allowed. Group size would be limited to 12 individuals with a maximum of 20 visitors allowed per day.	Doll House RMZ Same as Alternative D	Doll House RMZ Camping would be allowed at trailhead only. Human waste must be packed out. RMZ would be closed to pack animals and pets. Campfires would not be allowed. Unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. No people would be allowed inside or on top of structures.	Doll House RMZ No camping would be allowed in the RMZ. Human waste must be packed out. Campfires would not be allowed. Unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. No people would be allowed inside or on top of structures.

2.4.8. Riparian and Wetland Resources

2.4.8.1. GOALS AND OBJECTIVES

- Manage riparian resources for properly functioning conditions, ensuring ecological diversity, stability, and sustainability, including the desired mix of vegetation types, structural stages, and landscape/riparian/watershed function and provide for native and special status plant, fish, and wildlife habitats.
- Manage riparian areas for PFC, and ensure stream channel morphology and functions are appropriate to the local soil type, climate, and landform.
- Avoid or minimize the destruction, loss, or degradation of riparian areas, wetlands and associated floodplains; preserve and enhance natural and beneficial values.

2.4.8.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Dispersed recreation management: Limit use where the riparian area is being unacceptably damaged.
- Reclaim disturbed soils where erosion could cause adverse impacts to Monument objects and values, including riparian areas and aquatic ecosystems.
- Minimize surface-disturbing activities in riparian areas that alter vegetative cover, result in stream channel instability or loss of channel cross sectional area, or reduce water quality unless the action is designed for long-term benefits to riparian, wetland, or aquatic habitats (e.g., side channel restoration).
- Water quality management: Vegetate disturbed soils in sites where adverse impacts would occur according to the following priorities:
  - Aquatic ecosystems
  - Riparian ecosystems
- New trails developed in riparian areas would be designed to minimize impacts to riparian function. Trails would cross streams at points that best maintain riparian and aquatic ecosystems as well as trail and stream geometry. Crossings (fords) would be located at points of low bank slope and firm surfaces to the extent feasible.
- Reduce tamarisk, Russian olive, and other woody invasive species where appropriate using allowable vegetation treatments (see Section 3.12.2.1.1. for treatment acreages). Reseed treatment areas, when appropriate, to avoid erosion damage or the reestablishment of invasive species. Additionally, reduce herbaceous invasive species where appropriate.

- Floodplains and riparian/aquatic areas are:
  - Subject to fire suppression if necessary to protect riparian habitat.
  - Excluded from private and/or commercial use of woodland products, except for American Indian traditional purposes as determined on a site-specific basis; limited on-site collection of dead wood for campfires is allowed as Section 2.4.16.
  - Available for habitat, range, and watershed improvements and vegetation treatments described in the Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM 2007).
  - Excluded from surface disturbance by mechanized or motorized equipment (except as allowed above) and from structural development (unless there is no practical alternative and/or the development would enhance riparian/aquatic values).
- Cottonwood and willow harvest would be allowed for American Indian ceremonial uses only through a permit system. Restrictions on this harvest would be implemented as necessary to achieve or maintain PFC.
- No camping allowed within 200 feet of isolated springs or water sources to allow wildlife and livestock access to water.
- Discourage dispersed camping in riparian areas functioning at risk if camping is determined to be the causal factor.
- Avoid or limit surface disturbance in drinking source water protection zones.
- Range resource management: Avoid trailing livestock along the length of riparian areas except where existing stock driveways occur. Rehabilitate existing stock driveways where damage is occurring in riparian areas. Implement BMPs if monitoring shows livestock are causing damage to riparian areas. If BMPs are ineffective, relocate livestock outside riparian area if possible and when necessary to achieve riparian area goals.
- Riparian, floodplain, and wetland management: Prior to implementation of project activities, delineate and evaluate riparian areas and or wetlands that may be impacted. Project-specific impacts to riparian areas, floodplains, and wetlands would be analyzed at the site-specific level and mitigation measures would be developed and implemented as necessary to prevent unnecessary and undue resource degradation.
- Initial attack and fire suppression: Restrict heavy equipment line construction in riparian areas unless other values are at risk. Avoid aquatic and riparian ecosystems with this equipment to the extent possible.

2.4.8.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-10. Alternatives for Riparian Resources

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	For BLM lands, no new surface-disturbing activities would be allowed within active floodplains or within 100 meters (approximately 330 feet) of riparian areas along perennial springs and streams unless it can be shown that a) there are no practical alternatives, b) all long-term impacts can be fully mitigated, or c) the activity would benefit and enhance the riparian area. On USFS lands for riparian area management: Give special attention to land and vegetation approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water. This distance shall correspond to at least the recognizable area dominated by the riparian vegetation. Give special attention to adjacent terrestrial areas to ensure adequate protection for the riparian dependent resources (FSM 2500 Ch. 2520, 2526). For USFS-administered lands: Give preferential consideration to riparian area–dependent resources in cases of unresolvable resource conflicts.	For both BLM and USFS lands, with the exception of vegetation treatments and recreational infrastructure, preclude surface-disturbing activities within the following: Public water reserves Active floodplains 100-year floodplain of the San Juan River 500 feet of intermittent and perennial streams, rivers, riparian areas, wetlands, and springs	For both BLM and USFS lands, stream, seep, and spring buffers precluding surface-disturbing activities would be determined on a case-by-case basis using protocols from *Riparian Buffer Design Guidelines for Water Quality and Wildlife Habitat Functions on Agricultural Landscapes in the Intermountain West* (Johnson and Buffler 2008).	For both BLM and USFS lands, no new surface-disturbing activities would be allowed within active floodplains or within 100 meters (approximately 330 feet) of riparian areas along perennial and intermittent springs and streams with the following exceptions: Exception to buffer for vegetation treatments. Exception to buffer to allow development of recreational infrastructure. It can be shown that all long-term impacts can be fully mitigated. The activity would benefit the riparian area.	For both BLM- and USFS-administered lands, no new surface-disturbing activity would be allowed within active floodplains or within 100 meters (approximately 330 feet) of riparian areas along perennial and intermittent springs and streams unless it meets at least one of the following exceptions: The activity is a vegetation treatment that does not impair riparian function. The activity is related to development of recreational or range infrastructure that does not impair riparian function. It can be shown that all long-term impacts can be fully mitigated. The activity would benefit the riparian area. It can be shown that there are no practical alternatives and that all long-term impacts can be fully mitigated. For USFS-administered lands: Give preferential consideration to riparian area–dependent resources in cases of unresolvable resource conflicts.
X	X	Develop seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas considered functioning at risk.	Same as Alternative D	Same as Alternative D	If monitoring determines that a permitted activity is a causal factor in riparian areas Functioning at Risk, steps would be taken to mitigate the impacts of that activity, temporarily restrict the activity, or, if necessary, the riparian area would be closed to that activity as necessary to provide for restoration and maintenance of riparian area PFC. In those cases where there are closures, those closures would be lifted if changes in the permitted activity provide for restoration and maintenance of riparian area PFC.	If monitoring determines that a permitted activity is a causal factor in riparian areas Functioning at Risk, steps would be taken to mitigate the impacts of that activity or temporarily restrict the activity, or, if necessary, the riparian area would be closed to that activity to provide for restoration and maintenance of riparian area PFC. In those cases where there are closures, those closures would be lifted if changes in the permitted activity provide for restoration and maintenance of riparian area PFC.
X	X	Prohibit new or expansion of existing spring or other water source development and related facilities when loss of water results in unacceptable impacts on riparian, vegetation, fisheries, or other USFS resources and uses.	Require a hydrologic study for all proposed groundwater withdrawals and new wells. Do not authorize land uses for water withdrawals that would negatively affect groundwater for seeps and springs.	Requirements for a hydrologic study would be determined at the implementation level based on groundwater levels and geologic conditions.	Require a hydrologic study for all proposed groundwater withdrawals and new wells within 0.5 mile of seeps and springs. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs.	Requirements for a hydrologic study would be determined at the implementation level based on groundwater levels and geologic conditions. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs and ensure that any authorized withdrawals would provide for the proper care and management of Monument objects.

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	Transportation system management: Locate new roads and trails outside riparian areas unless alternative routes have been reviewed and rejected. Do not parallel streams when road location must occur in riparian areas except where absolutely necessary. Cross streams at points that best complement riparian and aquatic ecosystems as well as road and stream geometry. Locate crossings (fords) at points of low bank slope and firm surfaces.	Same as Alternative A with the following additions: During implementation-level travel planning, close and reclaim redundant routes, including social hiking trails, within 100 feet of seeps and springs, riparian areas, and floodplains. Close and reclaim redundant routes, including social hiking trails, in areas with high concentrations of biological soil crusts or sensitive soils. Provide clearly marked trails in areas where social multiple social trails have been developed.	Same as Alternative A with the following additions: During implementation-level travel planning, designate routes, including hiking and equestrian trails, to avoid sensitive water and soil resources where monitoring has shown degradation from these recreational activities. These sensitive areas include the following: Sensitive soils Seeps and springs	Same as Alternative A with the following additions: During implementation-level travel planning, designate routes, including hiking and equestrian trails, to avoid sensitive water and soil resources, to the extent practical, including the following: Sensitive soils Seeps and springs	During implementation-level travel planning: Locate new roads and trails, including motorized and non-motorized trails, outside riparian areas unless alternative routes have been reviewed and rejected. Do not parallel streams when road/trail location must occur in riparian areas except where absolutely necessary. Cross streams at points that best complement riparian and aquatic ecosystems as well as road/trail and stream geometry. Locate crossings (fords) at points of low bank slope and firm surfaces. During implementation-level travel planning, designate routes, including hiking and equestrian trails, to avoid sensitive water and soil resources where monitoring has shown degradation from these recreational activities. These sensitive areas include the following: Sensitive soils Seeps and springs
X	X	Reduce tamarisk where appropriate using allowable vegetation treatments.	Conduct vegetation treatments in riparian areas to remove nonnative tamarisk and Russian olive. Conduct vegetation treatments outside of the migratory bird nesting season. Limit treatment methods to non-mechanical methods including biological control and prescribed burning.	Conduct vegetation treatments in riparian areas to remove nonnative tamarisk and Russian olive. Conduct pretreatment surveys for nesting southwestern willow flycatcher and other migratory birds. Treatments would not be conducted in areas with active nesting birds. Treatment type would be determined on a case-by-case basis at the implementation level based on what is deemed consistent with maintaining Monument objects and values.	Conduct vegetation treatments in riparian areas to remove nonnative tamarisk and Russian olive. All treatment options would be available. Treatments would be conducted outside of the migratory bird nesting season.	Conduct vegetation treatments in riparian areas to remove nonnative vegetation, including tamarisk and Russian olive. Vegetation treatments would require coordination with agency biologists to ensure compliance with the Migratory Bird Treaty Act and the Endangered Species Act. Treatment type would be determined on a case-by-case basis at the implementation level based on what is deemed consistent with maintaining Monument objects and values.

2.4.9. Soil and Water Resources

2.4.9.1. GOALS AND OBJECTIVES

- Manage BLM- and USFS-authorized activities to promote sustainable soil functions, reduce threats to soil resources, and maintain or improve soils to a suitable level of functionality, with soil properties appropriate to site-specific climate and landform.
- Manage actions to protect, to the extent practicable, highly sensitive soils and biological soil crusts.
- Manage actions on BLM- and USFS-administered lands in the Planning Area to provide for long-term sustainability of soil.
- Manage actions on BLM- and USFS-administered lands in the Planning Area to promote watershed function and meet State water quality standards.

2.4.9.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Maintain or improve soil quality and long-term soil productivity through the implementation of *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997), Forest Service Handbook 2209.21 - *Rangeland Ecosystem Analysis and Monitoring Handbook*), and other soil protection measures.
- Manage uses to minimize and mitigate impacts to soil and water resources.
- Maintain and/or restore overall watershed health and water quality conditions by reducing erosion, stream sedimentation, and salinization of water.
- Assess watershed function using Utah's Standards for Rangeland Health; USFS desired conditions for rangelands; riparian PFC; Assessment, Inventory, and Monitoring methodology; and State water quality standards.
- Where Utah's Standards for Rangeland Health are not met or are not making progress toward meeting standards due to the impairment of biological soil crusts, apply guidelines from *Biological Soil Crusts: Ecology and Management* (BLM 2001, as revised) or other published literature based on the best available science, as appropriate.
- If surface-disturbing activities cannot be avoided on slopes between 21% and 40%, an erosion control plan would be required. The plan must be approved by the agencies prior to construction and maintenance and include the following:
  - An erosion control strategy
  - The BLM and USFS accepted and/or approved survey and design of the erosion control plan
- For slopes greater than 40%, no surface disturbance would be allowed unless it is determined that other placement alternatives are not practicable or when surface-disturbing activities (e.g., trail construction) are necessary to reduce or prevent soil erosion. In those cases, an erosion control plan would be required for review and approval by the BLM and USFS prior to permitting the activity.
- Water quality and soil productivity would be maintained or improved.
- Identified watershed improvement needs would be completed at a reasonable rate throughout the planning period, which would reduce soil erosion and stream sedimentation.
- Permit only those special uses that would not impair water quality or quantity.
- Avoid or limit surface disturbance in drinking water source protection zones.
- Implement best management practices (BMPs) relative to water quality according to Nonpoint Source Water Quality Management Plan for Utah (UDEQ 2013).

- Provide for harvest of forest products when the activity would improve water production and/or does not adversely affect water quality.
- Manage actions on BLM- and USFS-administered lands in the Planning Area in accordance with relevant recommendations published in the State of Utah's Total Maximum Daily Load (TMDL) reports.

2.4.9.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-11. Alternatives for Soil and Water

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	No similar action	Require a hydrologic study for all proposed groundwater withdrawals and new wells. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs.	Requirements for a hydrologic study would be determined at the implementation level based on groundwater levels and geologic conditions.	Require a hydrologic study for all proposed groundwater withdrawals and new wells within 0.5 mile of seeps and springs. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs.	Requirements for a hydrologic study would be determined at the implementation level based on groundwater levels and geologic conditions. Do not authorize land uses for water withdrawals that could negatively affect groundwater for seeps and springs and ensure that any authorized withdrawals would provide for the proper care and management of Monument objects.
X	X	No similar action	With the exception of vegetation treatments and recreational infrastructure, preclude surface-disturbing activities within the following: Public water reserves Active floodplains 100-year floodplain of the San Juan River 500 feet of intermittent and perennial streams, rivers, riparian areas, wetlands, and springs	Stream, seep, and spring buffers precluding surface-disturbing activities would be determined on a case-by-case basis using protocols from Johnson and Buffler (2008).	No new surface-disturbing activities would be allowed within active floodplains or within 100 meters (approximately 330 feet) of riparian areas or water resources including streams, springs, seeps, or water wells with the following exceptions: Exception to buffer to allow development of recreational infrastructure if it does not impact soil or water resources. Exception to buffer for vegetation treatments designed to minimize impacts to soil and water resources. It can be shown that activities do not have long-term impacts to soil and water resources. The activity would benefit soil or water resources.	For both BLM- and USFS-administered lands, no new surface-disturbing activity would be allowed within active floodplains or within 100 meters (approximately 330 feet) of riparian areas along perennial and intermittent springs and streams unless it meets at least one of the following exceptions: The activity is a vegetation treatment that does not impair riparian function. The activity is related to development of recreational or range infrastructure that does not impair riparian function. It can be shown that all long-term impacts can be fully mitigated. The activity would benefit soil and water resources. It can be shown that there are no practical alternatives and that all long-term impacts can be fully mitigated.
X	X	No similar action	In areas with designated trails, prohibit off-trail hiking in sensitive resources. These would include the following: Highly wind- or water-erodible soils Areas with a high likelihood of encountering significant cultural resources Areas with a high likelihood of encountering significant paleontological resources Areas with habitats supporting threatened and endangered or BLM and USFS sensitive species	If degradation of sensitive resources is observed or documented through monitoring in areas with designated trails, hikers would be encouraged to stay on the trail and leave no trace through placement of signs and/or use of barriers. If impacts from off-trail hiking continue, hiking off-trail would be prohibited.	Encourage Leave-No-Trace off-trail hiking practices.	If degradation of sensitive resources is observed or documented through monitoring in areas with designated trails, hikers would be encouraged to stay on the trail and leave no trace through placement of signs and/or use of barriers. If impacts from off-trail hiking continue, hiking off-trail could be prohibited.
X	X	No similar action	During implementation-level travel planning, close and reclaim redundant social hiking trails within 100 feet of the following: Seeps and springs Riparian areas Floodplains Close and reclaim redundant social hiking trails in areas with high concentrations of biological soil crusts or sensitive soils Provide clearly marked trails in areas where multiple social trails have been developed	Water resources and soils would be monitored for degradation from use of roads, equestrian routes, mechanized routes, hiking trails, and/or natural variability in seasonal cycles. This monitoring would include the following: Loss of bank stability Incised channels Headcutting or downcutting Sedimentation due to loss of vegetation cover During implementation-level travel planning, specific source(s) for degradation would be identified and adaptive management would be implemented to address this degradation. This management could include the following: Temporary closure of routes until area has a chance to passively reclaim Hardening or revegetation of degraded sites to prevent further soil erosion Active reclamation of degraded sites A combination of closure of routes with hardening and/or active reclamation	During implementation-level travel planning, avoid locating new hiking and equestrian trails and reduce duplicate trails within 100 meters of water sources or on sensitive soils (including steep slopes) whenever possible and practical to minimize impacts to soil and water resources.	During implementation-level travel planning, avoid locating new hiking and equestrian trails and reduce duplicate trails within 100 meters of water sources or on sensitive soils (including steep slopes) whenever possible and practical to minimize impacts to soil and water resources.

2.4.10. Special Designations

2.4.10.1. GOALS AND OBJECTIVES

- Manage areas with special designations to provide special management as required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes.
- Maintain the long-term sustainability of the values for which special designations are managed.

2.4.10.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- If WSAs within the Planning Area are released by Congress, the agencies would conduct a land use plan amendment of this MMP with accompanying NEPA analysis to determine how those lands would be managed. The Planning Area includes all or portions of the Bridger Jack Mesa, Fish Creek Canyon, and Mule Canyon WSAs.

- WSAs would continue to be managed as per BLM Manual 6330, including being managed as VRM Class I, closed to OHV use, and ROW exclusion areas.
- The Arch Canyon IRA would be managed consistent with the 2001 Roadless Rule (36 CFR 294).
- The management decisions in the Monticello RMP for the Lavender Mesa, Shay Canyon, and San Juan River ACECs would be carried forward to provide continuity in management throughout the ACECs for their respective relevant and important values. Changes in management for other resources or other resource uses that would affect these ACECs are described in detail in those resource sections.

2.4.11. Special Status Species

2.4.11.1. GOALS AND OBJECTIVES

- Manage special status species habitat to maintain viable species populations and prevent Federal listing.
- Inventory and monitor special status species and their habitats to contribute to a greater understanding of their abundance and distribution within the Planning Area.
- Implement recovery actions for listed species with USFWS recovery plans such that the measurable results of these actions contribute to meeting de-listing criteria for a given species.

2.4.11.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Raptor management would be guided by the practices in Appendix H, utilizing seasonal and spatial buffers as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses.
- Any nonessential routes developed for a project located in special status species habitat would be closed and rehabilitated when the project is complete.
- Vegetation management actions would be coordinated with other resource programs to ensure consistency with management of Monument objects and values.
- Protect bat roosting, hibernating, and breeding habitat from disturbance. Abandoned Mine Lands would be monitored/surveyed prior to reclamation in accordance with the Utah Division of Wildlife Resources and the Utah Division of Oil, Gas and Mining Abandoned Mine Reclamation Program *Memorandum of Understanding: Conservation and Management of Bats in Abandoned Mines in Utah* (UDWR 2015). If bats are present, bat gates would be installed unless human safety is at risk.
- In suitable northern goshawk nesting habitat, complete territory occupancy surveys prior to management actions. When an active nest area is identified, identify the active nest area (generally 30 acres), two alternative nest areas, and three replacement nest areas where USFS vegetation management is designed to maintain or improve desired nest area habitat.
- When non-vegetative management activities are proposed that would result in loss of suitable goshawk habitat, sufficient mitigation measures would be employed to ensure an offset of the loss.
- In active northern goshawk nest areas, restrict USFS management activities and human uses for which the USFS issues permits during the active nesting period (does not include livestock permits) unless it is determined that the disturbance is not likely to result in nest abandonment.
- Identify a post-fledging area for goshawk that encompasses the active, alternative, and replacement nest areas and additional suitable habitat (600 acres including nest areas). Vegetative manipulation within the post-fledging area should be designed to maintain or improve goshawk habitat. Created openings in ponderosa pine and mixed conifer types should not exceed 2 acres. Management activities should be restricted during the active nesting period (March 1 to September 30).
- Prohibit commercial overnight use in designated Mexican spotted owl nesting areas (i.e., protected activity centers) from March 1 to August 31.
- Avoid loss or degradation and promote restoration of side channel, backwater, or other off-channel habitats important for special status aquatic species.

2.4.12. Travel and Transportation Management

2.4.12.1. GOALS AND OBJECTIVES

- Manage the transportation system so it provides safe and reasonable access for public travel, recreation uses, traditional and cultural uses, and land management and resource protection activities, and contributes to the social economic sustainability of local communities while providing proper care and management of Monument objects and values.
- Support a culture of surface travel user stewardship and conservation of the landscape during user travel.

2.4.12.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Identify the entire BENM as a travel management area for the purposes of current and future travel management.
- This plan would guide future implementation-level travel management planning including mechanized and other modes of travel where the agencies would designate travel routes within the Indian Creek Unit and Shash Jáa Unit as per Presidential Proclamation 9558, as modified by Proclamation 9681. This would be done outside of this Monument management planning process through a site-specific implementation-level travel plan. Until an implementation-level travel management plan or emergency order is completed for the Shash Jáa Unit and Indian Creek Unit, all current implementation-level route designations within areas designated in the MMPs as OHV limited areas would remain in effect. This would include the routes designated in the Monticello RMP and the USFS Motorized Vehicle Use Map (Maps 2-25 and 2-26). Management and use of routes on BLM-administered lands would be consistent with BLM Travel and Transportation Manual 1626, Handbook 8342, and other applicable guidance.
- Any additional roads or trails designated for OHV use as part of implementation-level travel planning must be for the purpose of public safety or protection of Monument objects and values.
- Implementation-level travel planning in SRMAs and ERMAs would recognize the San Juan County OHV route system and integrate it to the extent possible in travel management and recreational goals and objectives.
- Implementation-level travel planning would consider Monument objects and values in the determination of which routes to designate, develop, or close. Details regarding resource-specific criteria for implementation-level travel planning are provided, as applicable, in the respective resource alternatives sections in this matrix.
- As part of implementation-level travel planning, monitor OHV use areas and, if unacceptable impacts to natural and cultural resources are occurring, develop implementation-level limitations including route designation, route closure, motorized vehicle size and weight limitations, or other mitigation measures as necessary to address those impacts.

- Any lands acquired by the BLM over the life of the MMPs would be managed with the same OHV area designations of adjoining BLM lands or as stated or implied in the land transfer. If clarification is absent, the BLM would manage the acquired lands as OHV limited. The type of limitation will be determined by implementation-level travel planning. Until that implementation-level travel planning is completed, the OHV limited use would continue in the same manner and degree consistent with the proper care and management of Monument objects and values.
- Mechanized travel (e.g., bicycles) is limited to routes where OHV use is allowed and trails specifically designated for mechanized use.
- Management of the Mule Canyon, Fish Creek Canyon, and Bridger Jack Mesa WSAs in the Planning Area would be according to BLM Manual 6330, Management of BLM Wilderness Study Areas.
- Any of the following trails found wholly within the Monument would be managed for non-motorized and non-mechanized use:
  - McLoyd Canyon, North Mule Canyon, South Mule Canyon, Lower Mule Canyon from Comb Wash, Mule Canyon or Cave Canyon towers, Butler Interpretative Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, Procession Panel Trail, Wolf Man Panel Trail, Moon House Trail, Ball Room Cave Trail, Lower Mule Canyon from Comb Wash, Blue Gramma, 4x4 Wall, Donnelly, Supercrack, Battle of the Bulge, Bridger Jack Mesa, Broken Tooth Wall, Scarface, and Pistol Whipped

    On USFS lands: Butts Canyon, Texas Canyon, Arch Canyon, West Rim Texas Canyon, East Rim Texas Canyon, and South Long Point.

2.4.12.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-12. Alternatives for Travel Management

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	The Monument would be designated as an OHV limited area except for the following, which are designated as OHV closed areas (Maps 2-27 and 2-28): Bridger Jack Mesa WSA Lavender Mesa ACEC Mule Canyon WSA Dark Canyon Wilderness San Juan River SRMA closed area Arch Canyon IRA (USFS) Fish Creek Canyon WSA	Same as Alternative A except that the following areas would be designated as OHV closed areas (Maps 2-29 and 2-30): Shay Canyon ACEC Upper Davis Canyon OHV closed area Lavender Canyon OHV closed area Milk Ranch Point (USFS) Arch Canyon RMZ (BLM) Areas managed for protection of wilderness characteristics Until implementation-level travel planning is completed, OHV use within areas designated in the MMPs as OHV limited areas would be managed according to the MFO travel management plan and the USFS Motorized Vehicle Use Map (Maps 2-25 and 2-26).	Same as Alternative A (Maps 2-27 and 2-28) with the following exception: Close the last 0.5 mile of Arch Canyon to motorized vehicles between March 1 and August 31 to protect nesting Mexican spotted owls Until implementation-level travel planning is completed, OHV use within areas designated in the MMPs as OHV limited areas would be managed according to the MFO travel management plan and the USFS Motorized Vehicle Use Map (Maps 2-25 and 2-26).	Same as Alternative A (Maps 2-27 and 2-28). Until implementation-level travel planning is completed, OHV use within areas designated in the MMPs as OHV limited areas would be managed according to the MFO travel management plan and the USFS Motorized Vehicle Use Map (Maps 2-25 and 2-26).	The Monument would be designated as an OHV limited area except for the following, which are designated as OHV closed areas (Maps 2-27 and 2-28): Bridger Jack Mesa WSA Lavender Mesa ACEC Mule Canyon WSA Dark Canyon Wilderness San Juan River SRMA closed area Arch Canyon IRA (USFS) Fish Creek Canyon WSA Until implementation-level travel planning is completed, OHV use within areas designated in the MMPs as OHV limited areas would be managed according to the MFO travel management plan and the USFS Motorized Vehicle Use Map (Maps 2-25 and 2-26). Determine whether specific roads and motorized trails in the Milk Ranch Point Area are compatible and suitable with Monument objects and values when developing the travel management plan actions such as retention, rerouting, and/or closure for the BENM.

2.4.13. Vegetation

2.4.13.1. GOALS AND OBJECTIVES

- Identify the desired composition and range of conditions for vegetation communities throughout the Planning Area.
- Manage vegetation and native plant communities relative to their associated landform(s) to optimize plant community health and resilience to landscape-wide impacts.
- Manage vegetation to support fish and wildlife habitat and healthy watersheds.
- Manage vegetation to support medicinal plants and other vegetative resources deemed by Tribes as being culturally relevant where management is consistent with the proper care and management of Monument objects and values.
- Incorporate traditional knowledge in the identification and management of culturally relevant plants.

2.4.13.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Areas that meet Utah's Rangeland Health Standards or USFS desired conditions for rangelands would be open to private seed gathering and plant collection.
- Cooperating agreements with other Federal, State, local, and private organizations would be developed to control invasive nonnative species, control insect pest species, and implement fuels vegetation treatments and wildland urban interface risk assessments and management.
- Pack stock and riding stock users on agency-administered land would be required to use certified weed-seed-free feed.
- Restoration and rehabilitation activities would be required to use certified weed-seed-free seed mixes, mulch, fill, etc.
- The power washing of equipment used for permitted or administrative uses would be required in areas with known weed populations or vectors to known weed populations to help control noxious weeds.
- Agencies would provide for the management, protection, and access to vegetation types important to American Indian ceremonial or other traditional uses.
- Maintain or increase existing levels of vegetation treatments. Treatment priorities would be identified to make progress in moving areas in VCC III to II, and VCC II to I.

2.4.13.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-13. Alternatives for Vegetation

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	Areas that meet Utah's Rangeland Health Standards or USFS desired conditions for rangelands would be open to seed gathering and plant collection, including commercial seed gathering. The entire Monument or certain localities may be closed to seed gathering dependent upon annual seed production of native plants in relation to sustainable landscapes.	The entire Monument or certain localities may be closed to seed gathering dependent upon annual seed production of native plants in relation to sustainable landscapes. An exception to this would be made to allow for private seed gathering and plant collection for American Indian traditional, medicinal, and ceremonial purposes.	Same as Alternative B	Same as Alternative B	The entire Monument or certain localities may be closed to seed gathering as necessary to provide for sustainable annual seed production of native plants. An exception to this would be made to allow for private seed gathering and plant collection for American Indian traditional, medicinal, and ceremonial purposes.

2.4.14. Visual Resource Management and Night Skies

2.4.14.1. GOALS AND OBJECTIVES

- Manage public lands in a manner that would protect the quality of the scenic (visual) values of these lands for present and future generations.
- Manage BLM-administered lands using the VRM system according to VRM class objectives and manage visual resources on USFS-administered lands to SIO classes that are determined first through consideration of existing scenic quality followed by consideration of other resource values and land use allocations.
- Establish VRM and SIO classes for the Planning Area.
- Promote BMPs for reclamation of landscapes, restoration of native habitats, and rehabilitation of waterways and riparian areas to enhance natural and historical scenic values that have been negatively altered. These would include BMPs found in *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands* (BLM 2013).

2.4.14.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Promote BMPs for reclamation of landscapes, restoration of native habitats, and rehabilitation of waterways and riparian areas to enhance natural and historical scenic values that have been negatively altered.
- The following management would be implemented to minimize impacts to night skies:
  - Limit the use of artificial lighting during nighttime operations to only those determined necessary for the safety of operations and personnel.
  - Utilize shielding and aiming techniques, and limit the height of light poles to reduce glare and avoid light shining above horizon(s).
  - Use lights only where needed, use light only when needed, and direct all lighting on-site. No permanent lighting would be allowed in VRM Class I areas.
  - Use motion sensors, timers, or manual switching for areas that require illumination but are seldom occupied.
  - Any authorized facilities would use the best technology available to minimize light emissions.
  - Reduce lamp brightness and select lights that are not broad spectrum or bluish in color. Use lamp types such as sodium lamps, which are less prone to atmospheric scattering.
  - Require a lightscape management plan where an extensive amount of long-term lighting is proposed.

2.4.14.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Existing visual resources in the Monument were the base factor in the development of alternatives for visual resources, including current quality and condition of the visual resource values, the scenic integrity of the landscape's intact natural character, and trends in human alteration of the landscape. These characteristics were considered with other resource uses and needs. The VRI provides a basis for this information including scenic quality distance zones, public sensitivity, and sensitive viewsheds of adjacent land uses. These are described in detail in Section 3.19 of this EIS.

Table 2-14. Alternatives for Visual Resources

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	Manage 13,933 acres as VRM Class I (on BLM-administered lands) and Visual Management System (VMS) Preservation (on USFS-administered lands) Manage 76,142 acres as VRM Class II (on BLM-administered lands) and VMS Retention (on USFS-administered lands) Manage 77,147 acres as VRM Class III (on BLM-administered lands) and VMS Partial Retention (on USFS-administered lands) Manage 33,880 acres as VRM Class IV (on BLM-administered lands) and VMS Modification (on USFS-administered lands) (Maps 2-31 and 2-32)	Manage 108,917 acres as VRM Class I (on BLM-administered lands) and SIO Very High (on USFS-administered lands) Manage 92,793 acres as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands) The following areas would be managed as VRM Class I (BLM-administered lands) or SIO Very High (USFS-administered lands) (Maps 2-33 and 2-34): WSAs IRAs Wilderness San Juan River ACEC Viewshed from Natural Bridges National Monument Areas managed for protection of wilderness characteristics	Manage 27,204 acres as VRM Class I (on BLM-administered lands) and SIO Very High (on USFS-administered lands) Manage 174,506 acres as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands) The following areas would be managed as VRM Class I (on BLM-administered lands) or SIO Very High (on USFS-administered lands) (Maps 2-35 and 2-36): WSAs IRAs Wilderness San Juan River ACEC Viewshed from Natural Bridges National Monument with the exception of the SR-275 corridor	Manage 12,277 acres as VRM Class I (on BLM-administered lands) and SIO Very High (on USFS-administered lands) Manage 189,432 acres as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands) The following areas would be managed as VRM Class I (on BLM-administered lands) or SIO Very High (on USFS-administered lands) (Maps 2-37 and 2-38): WSAs Wilderness San Juan River ACEC	Manage 25,046 acres as VRM Class I (on BLM-administered lands) and SIO Very High (on USFS-administered lands) Manage 176,663 acres as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands) The following areas would be managed as VRM Class I (on BLM-administered lands) or SIO Very High (on USFS-administered lands) (Maps 2-38 and 2-39): WSAs Wilderness San Juan River ACEC IRAs

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	No similar action	All areas not managed as VRM Class I (BLM-administered lands) or SIO Very High (USFS-administered lands) under this alternative would be managed as VRM II (BLM-administered lands) and SIO High (USFS-administered lands). There would be no exceptions to meeting designated VRM requirements.	All areas not managed as VRM Class I (on BLM-administered lands) or SIO Very High (on USFS-administered lands) under this alternative would be managed as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands). An exception to VRM Class II would be allowed for recreation infrastructure, such as trailheads, campgrounds, contact stations, and toilet facilities, when this infrastructure is consistent with proper care and management of Monument objects and values. 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.	All areas not managed as VRM Class I (on BLM-administered lands) or SIO Very High (on USFS-administered lands) under this alternative would be managed as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands). An exception to VRM Class II would be allowed for recreation infrastructure, such as trailheads, campgrounds, contact stations, and toilet facilities, when this infrastructure is consistent with proper care and management of Monument objects and values. 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.	All areas not managed as VRM Class I (on BLM-administered lands) or SIO Very High (on USFS-administered lands) under this alternative would be managed as VRM Class II (on BLM-administered lands) and SIO High (on USFS-administered lands). An exception to VRM Class II would be allowed for 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 and values. 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.

2.4.15. Wildlife and Fisheries

2.4.15.1. GOALS AND OBJECTIVES

- Protect critical and crucial fish and wildlife habitat including transitional and stop-over habitat for native wildlife.
- Engage local, State, Federal, and Tribal partners in program and project design to address management issues and minimize or avoid impacts to fish and wildlife species and their habitats across jurisdictional boundaries.
- Inventory and monitor fish and wildlife species and their habitats, and facilitate fish and wildlife researchers to coordinate with agency biologists to contribute to a greater understanding of species abundance and distribution within the Planning Area.
- Protect large undisturbed blocks of wildlife habitat, and, where possible, consolidate and create larger protected blocks of habitat through land acquisition.
- Protect and maintain wildlife habitat connectivity.
- Promote and restore healthy riparian habitat throughout the Planning Area.
- Maintain and preserve aquatic connectivity through land acquisition and maintenance of instream flows, and by removal of barriers where practicable.

2.4.15.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Wildlife habitat objectives would be considered in all reclamation activity. Priority would be given to meeting or making progress toward meeting *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or USFS desired conditions for rangelands.
- Ground-disturbing actions that adversely impact fish and wildlife species and habitats would be avoided where possible. Where unavoidable disturbances would be required, the BLM and the USFS would follow current agency policy regarding the application of appropriate minimization and mitigation measures.
- In areas lacking proper water distribution or natural water sources, allow for installation of precipitation catchments (guzzlers) or the development of springs on rangelands.
- Raptor management would be guided by the use of raptor BMPs (see Appendix H), utilizing seasonal and spatial buffers and mitigation to maintain and enhance raptor nesting and foraging habitat while allowing other resource uses.
- Maintain or provide habitat requirements for deer and elk, including forage areas, hiding cover, and migration routes when detected. Manage crucial deer and elk habitat to minimize disturbance except when conducting habitat projects for big game.
- Maintain, restore, and/or improve critical habitat requirements for threatened and endangered fish, including restoration and enhancement of backwater, side channel, and floodplain habitats. Manage habitat to minimize disturbance except when conducting riparian and aquatic habitat projects.
- Provide habitat needs for Abert's squirrel in ponderosa pine habitat. Maintain occupied habitats to produce good habitat condition (1 squirrel/10 acres) to very good habitat condition (2–4 squirrels/10 acres). Maintain and/or improve habitat conditions on at least 60% of the ponderosa pine habitat type.
- Agencies would work with stakeholder and volunteer groups to educate climbers on methods to protect significant natural and cultural resources.
- Agencies would post or otherwise provide educational information to reduce climbing and canyoneering impacts on active raptor nests.
- Maintain, restore, and/or improve critical habitat requirements for native fish, amphibian and aquatic species, including restoration and enhancement of backwater, side channel, and floodplain habitats. Manage habitat to minimize disturbance except when conducting riparian and aquatic habitat improvement projects.

2.4.15.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-15. Alternatives for Wildlife and Fisheries

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	During nesting season for migratory birds (May 1–July 30), avoid or minimize surface-disturbing activities and vegetation-altering projects and broad-scale use of pesticides in identified and occupied priority migratory bird habitat.	From April 1 to July 31 or if nesting birds are observed, avoid or minimize surface-disturbing activities and vegetation-altering projects and broad-scale use of pesticides in identified and occupied priority migratory bird habitat.	Same as Alternative B.	Same as Alternative B.	From April 1 to July 31 or if nesting birds are observed, avoid or minimize surface-disturbing activities and vegetation-altering projects and broad-scale use of pesticides in identified and occupied priority migratory bird habitat.
X	X	Temporarily close areas (amount of time depends on species) near raptor nests to rock climbers or other activities if activity may result in nest abandonment.	Temporarily close areas to recreational activities with active raptor nesting within the recommended raptor buffers described in Appendix H.	For known and historic eyries and perennially active nest sites close to recreational activities during nesting season with buffers stipulated in Appendix H, if monitoring determines that these sites are not active, areas within the vicinity of these nests would be open to these activities.	Same as Alternative A.	Temporarily close areas (amount of time depends on species) near raptor nests to rock climbers or other activities if activity may result in nest abandonment.
X	X	Special conditions for the seasonal wildlife protection areas include the following for all land-use authorizations except for private woodland harvest: No use of low-flying aircraft Closed to the following uses, among others during the established season Permitted or commercial motorized use may be limited in number of participants and duration depending on the event No use of pyrotechnics, shooting, etc. during permitted filming because of noise impacts	See "Minimum Impact Filming Criteria" in Section 2.4.3.	See "Minimum Impact Filming Criteria" in Section 2.4.3.	See "Minimum Impact Filming Criteria" in Section 2.4.3.	See "Minimum Impact Filming Criteria" in Section 2.4.3.

2.4.16. Forestry and Woodlands

2.4.16.1. GOALS AND OBJECTIVES

- Maintain or develop healthy resilient forests that include diversity in age class, stand structure, and desired species composition.
- Allow for opportunities for woodland harvests outlined in the Monument objects and values.
- Maintain or increase woodland harvest to meet demand while maintaining forest health.
- While managing woodlands and forest resources, design vegetation treatments to maintain old-growth.
- For USFS lands, the following goals and objectives would be considered when managing forestry and woodlands:
  - When initiating vegetative management treatments in forested cover types, provide for a full range of seral stages by forested cover type that achieves a mosaic of habitat conditions and diversity. Each seral stage should contain a strong representation of early seral tree species.
  - Planned vegetative management treatments (excluding unplanned and unwanted wildland fire) in the mature and/or old structural groups in a landscape that is at or below the desired percentage of land area in mature and old structural stages (40% conifer and 30% aspen) should be designed to maintain or enhance the characteristics of these structural stages.
  - When initiating vegetative management treatments in forested cover types, leave a minimum of 200 snags/100 acres in the ponderosa pine and aspen cover types and 300 snags/100 acres in the mixed conifer cover type. The minimum preferred size of snags is 18 inches diameter at breast height and 30 feet tall. If the minimum number of snags is unavailable, green trees should be substituted. If the minimum size is unavailable, use largest trees available on-site. The number of snags should be present at the stand level on average and, where they are available, distributed over each treated 100 acres.
  - When initiating vegetative management treatments, prescriptions should be designed to retain a minimum of 30 down logs (12-inch mid-point diameter and 8 feet long) and 50 tons of coarse woody debris/10 acres in the ponderosa pine cover type, 50 down logs and 100 tons of coarse woody debris/10 acres in mixed conifer, and 50 down logs and 30 tons of coarse woody debris/10 acres in the aspen type.
  - Vegetative treatment should be designed to maintain or promote a vegetative structural stage 4, 5, and/or 6 group. The percentage of the group acreage covered by clumps of trees with interlocking crowns should typically range from 40% to 70% in post-fledgling and foraging areas and from 50% to 70% in nest areas. To manage outside this range, it should either be shown that the range is not within PFC for the site or the biological evaluation process determines that managing outside the range would be consistent with landscape needs of the goshawk and its prey. Use the best information available and deemed most reliable to make determinations. Groups are made up of multiple clumps of trees. Groups should be of a size and distribution in a landscape that is consistent with disturbance patterns defined in regional or local PFC assessments. Clumps typically have between two and nine trees in the vegetative structural stage 4, 5, or 6 size class with interlocking crowns.

2.4.16.2. MANAGEMENT ACTIONS COMMON TO ALL ACTION ALTERNATIVES

- Follow the agencies' forest health and forest management standards and guidelines to assess conditions and guide management decisions for woodland resources.
- Cottonwood and willow harvest would be allowed for American Indian ceremonial uses only by permit. Restrictions on this permitted harvest would be implemented as necessary to achieve or maintain PFC, and to maintain or improve threatened and endangered species or special status species, wildlife, and aquatic habitat.
- On BLM-administered lands, allow woodland harvest in areas where the BLM has approved fuels treatment projects (unless otherwise prohibited under these alternatives).
- Forest products harvest for USFS-administered and BLM-administered lands would be managed as per *Comparison of Forest Products Removal between Forest Service and Bureau of Land Management on Lands Falling under the Boundary of the Bears Ears National Monument, May 2018* (included as Appendix K).

- Permits for private use of woodland products would continue to be issued to the public, consistent with the availability of woodland products and the protection of other resource values.
- Utilize native plant species from locally adapted seed sources in management activities when and where practical. Nonnative plant species have the potential to cause systems to move outside of historic range of variation, and therefore the use of nonnative species should be justified to indicate how their use is important for maintaining or restoring a cover type to functioning conditions.
- USFS-administered lands would be designated as unsuitable for timber production and would be withdrawn from that use to allow those lands to meet other resource purposes, including proper care and management of Monument objects and values. This would not preclude pre-commercial and commercial harvest to meet other resource objectives.

2.4.16.3. MANAGEMENT ACTIONS BY ALTERNATIVE

Table 2-16. Alternatives for Forestry and Woodlands

Indian Creek	Shash Jáa	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
X	X	Prioritize treatment in high-value/high-risk areas (wildland urban interface, developed recreation facilities including campgrounds, Fire Regime Condition Class III).	Same as Alternative D	Same as Alternative D	No commercial woodland harvest on BLM-administered lands in Planning Area.	No commercial woodland harvest on BLM-administered lands in Planning Area. Prioritize treatment in high-value/high-risk areas (wildland urban interface, developed recreation facilities including campgrounds, Fire Regime Condition Class III areas).
X	X	Allow private-use woodland harvest in areas with pinyon pine and juniper encroachment with focus on the restoration of the sagebrush steppe community.	Same as Alternative C	Within designated woodland harvest areas, private use woodland harvest on BLM- and USFS-administered lands would be allowed in areas with pinyon pine and juniper encroachment where site-specific analysis indicates that harvest would be useful for restoration of the sagebrush steppe community.	Within designated woodland harvest areas, private use woodland harvest on BLM- and USFS-administered lands would be allowed in areas with pinyon pine and juniper encroachment.	Within designated woodland harvest areas, private use woodland harvest on BLM- and USFS-administered lands would be allowed in areas with pinyon pine and juniper encroachment where site-specific analysis indicates that harvest would be useful for restoration of the diversified vegetative community.
X	X	Fuel treatment projects would allow for harvest of woodland products.	Same as Alternative D	Same as Alternative D	Provide for woodland harvest to support fuel treatment projects, as needed.	Provide for woodland harvest to support fuel treatment projects, as needed.
X	X	Zones in the MFO planning area considered for private and/or commercial use of woodland products: Harts Draw, Salt Creek Mesa, South Cottonwood, North Comb Ridge, Cedar Mesa, White Canyon (Maps 2-40 and 2-41) Exclude all WSAs from woodland product use except for limited on-site collection of dead wood for campfires. Exclude all developed recreation sites, livestock/wildlife exclosures, cultural sites, and the Indian Creek SRMA from all woodland product use, including on-site collection of dead wood for campfires. Exclude floodplains and riparian and aquatic areas from woodland product use except for limited on-site collection of driftwood for campfires and uses for American Indian ceremonial purposes as determined on a site-specific basis. Limitations on off-road travel for wood gathering would be modified as necessary to maintain long-term sustainability or facilitate wood gathering where resource impacts are not a concern.	Same as Alternative D, except do not allow private-use woodland harvest in the following areas (Maps 2-42 and 2-43): Milk Ranch Point Lands with wilderness characteristics managed for wilderness characteristics under this alternative	Same as Alternative D (Maps 2-44 and 2-45) If monitoring of vegetation cover and soil erosion indicates that woodland harvest is having potentially irretrievable or irreversible impacts on natural or cultural resources or is conflicting with Monument objects and values, the Authorized Officer (BLM)/Responsible Official (USFS) would alter the designated woodland harvest area or harvest season as necessary to allow for resource reclamation and/or to protect that resource or resource use.	Same as Alternative A, except: Open areas would be considered for private use of woodland products only. Do not allow private-use woodland harvest in the following areas (Maps 2-44 and 2-45): Wilderness, IRAs, and WSAs Areas with PFYC of 4 and 5 on BLM-administered lands and PFYC 5 on USFS-administered lands Lands managed as VRM Class I (on BLM-administered lands) or SIO Very High (on USFS-administered lands) Floodplains and riparian areas except for American Indian ceremonial uses The archaeology sites Doll House and Moon House Complex	Zones in the Planning Area considered for private use of woodland products: Harts Draw, Salt Creek Mesa, South Cottonwood, North Comb Ridge, Cedar Mesa, White Canyon (Maps 2-40 and 2-41). Exclude all WSAs and IRAs from woodland product use except for limited on-site collection of dead wood for campfires. Exclude all developed recreation sites, livestock/wildlife exclosures, cultural sites, Indian Creek SRMA from all woodland product use, including on-site collection of dead wood for campfires. Exclude floodplains and riparian and aquatic areas from woodland product use except for American Indian ceremonial purposes as determined on a site-specific basis. Existing limitations on off-road travel for wood gathering could be modified as necessary to maintain long-term sustainability or facilitate wood gathering where resource impacts are not a concern. Prior to authorizing private woodland product harvest, the agencies would ensure that the activity is consistent with the proper care and management of Monument objects and values. If monitoring of vegetation cover and soil erosion indicates that woodland harvest is having potentially irretrievable or irreversible impacts on natural or cultural resources or is conflicting with Monument objects and values, the Authorized Officer (BLM)/Line Officer (USFS) would alter the designated woodland harvest area or harvest season as necessary to allow for resource reclamation and/or to protect that resource or resource use.
X	X	Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes to collect wood: Harts Draw	Designated woodland harvest areas would be available to private use of woodland products with access for gathering limited to designated routes.	On BLM-administered lands, the Authorized Officer (BLM) would limit access for permitted wood gathering to designated routes or may grant access off designated routes if consistent with the objects and values of the Monument. This determination would be made annually based on monitoring of existing vegetation cover and soils erosion at the site-specific project level. Access for permitted wood gathering following fuels treatment farther than 150 feet from designated routes would be required to be reclaimed after woodland harvest. Detailed requirements for this final reclamation and access would be determined through implementation-level planning. On USFS-administered lands, the Responsible Official (USFS) would limit OHV cross-country travel for permitted wood gathering to within 150 feet of a designated route, as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map. Cross-country OHV use for wood gathering following fuels treatment farther than 150 feet from designated routes would be required to be reclaimed after woodland harvest.	Designated woodland harvest areas would be available to private use of woodland products with access for permitted wood gathering allowed within 150 feet of designated routes.	On BLM-administered lands, the Authorized Officer (BLM) would limit access for wood gathering to designated routes or may grant access off designated routes if consistent with the objects and values of the Monument. This determination would be made based on monitoring of existing vegetation cover and soils erosion at the site-specific project level. Access for permitted wood gathering following fuels treatment farther than 150 feet from designated routes would be required to be reclaimed after woodland harvest. Detailed requirements for this final reclamation and access would be determined through implementation-level planning. On USFS-administered lands, the Responsible Official (USFS) would limit OHV cross-country travel for permitted wood gathering to within 150 feet of a designated route, as reflected in the 1991 Manti-La Sal National Forest Travel Management Plan/Travel Map and amended by the most current Monticello Ranger District Motor Vehicle Use Map. Cross-country OHV use for wood gathering following fuels treatment farther than 150 feet from designated routes would be required to be reclaimed after woodland harvest.

2.4.17. Management Actions Common to All Action Alternatives and Resource Programs

- Apply BMPs (Appendix I: Best Management Practices) and stipulations (Appendix J: Stipulations Applicable to Surface-Disturbing Activities) to discretionary surface-disturbing activities.
- Implement a Monitoring Strategy (Appendix M) to monitor the impacts of land use plan decisions on Monument objects and values over the life of the plans.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3 describes the existing condition and trends of resources and resource uses within the Planning Area. For many resources, descriptions of the affected environment reference the AMS. This chapter also analyzes the potential effects of the Federal action on these resources and resource uses. The Federal action is the BLM's and USFS's approval of the MMPs, associated land use plan amendments, and subsequent management of the Federal lands in the BENM subject to the approved MMPs for the Indian Creek and Shash Jáa Units of the BENM.

This chapter was developed using the best available data for each resource and resource use. The data have been gathered from a variety of sources, including the BLM MFO, USFS Manti-La Sal National Forest, other agencies, published and unpublished reports, databases, and websites. The scope of the impact analysis is commensurate with the level of detail of the management actions presented in Chapter 2 and the availability and/or quality of data necessary to assess impacts.

Geographic information system (GIS) data have been used to describe resources, analyze and compare potential impacts among the alternatives, and generate the maps in Appendix B. These maps should be reviewed in conjunction with the impacts analyses. The use of calculations depends on the quality and availability of data. Acreage figures and other numbers are approximate projections for comparison and analysis only; readers should not infer that they reflect exact measurements. In the absence of quantitative data, qualitative analysis is used.

3.1. Assumptions

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

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

- Subsequent implementation-level management actions necessary to execute the planning-level decisions in the MMPs/EIS would be subject to further environmental review, including NEPA, as appropriate.
- The decisions proposed in the alternatives apply to public lands and areas that require Federal permitting or authorization. However, cumulative impacts analyses also consider decisions made by other entities or individuals that affect the same resources that the MMPs do.
- Management actions in the MMPs, as well as all subsequent implementation-level projects and management actions guided by the MMPs, would be subject to valid existing rights and would comply with all Federal laws, regulations, and policies. Although the agencies may not unilaterally add a new stipulation to a valid existing right, the agencies can subject development of valid existing rights to reasonable conditions as necessary to protect Monument objects and values, through the application of conditions of approval at the time of permitting.
- Sufficient funding and personnel would be available to implement the MMPs.
- Best management practices (BMPs) are measures applied on a site-specific basis to reduce or eliminate adverse impacts. For any proposed activities in the Planning Area, appropriate BMPs would be selected on a case-by-case basis to meet the site-specific requirements of the project and local environment from the list of BMPs provided in Appendix I. The application of BMPs on a case-by-case basis would be made as needed to meet the goals and objectives of the MMPs and to provide for proper care and management of Monument objects and values.

3.2. Availability of Data and Incomplete Information

The best available data were used in the preparation of the analysis contained in the MMPs/EIS. Where appropriate, indicators are presented for each resource or resource use to further describe current conditions and potential impacts. However, certain information is unavailable, or site-specific information is required for analysis. Because of a lack of quantitative or location-specific data, some impacts can be discussed only in qualitative terms. Subsequent project-level NEPA documents will provide the opportunity to collect and analyze site-specific data.

3.3. Analysis Methods

Potential impacts are identified as direct or indirect effects and are described in terms of type, context, duration, and intensity, which are generally defined below.

Direct and indirect impacts: Direct impacts are caused by a management action or implementation of an alternative and occur at the same time and place; indirect impacts result from implementing a management action or alternative but usually occur later in time or are removed in distance and are reasonably certain to occur.

Type of impact: Impacts are characterized using the indicators described at the beginning of each resource section. The presentation of impacts for key planning issues is intended to provide the reader with an understanding of the trade-offs associated with each alternative.

Context: Context describes the area or site-specific, local, Planning Area–wide, or regional location where the impact would occur. Site-specific impacts would occur at the location of the management action; local impacts would occur in the general vicinity of the action area; Planning Area–wide impacts would affect lands and resources throughout the Planning Area; and regional impacts would extend beyond the Planning Area boundaries.

Intensity: Rather than categorizing impacts with qualitative statements (e.g., major, moderate, or minor), this analysis describes the impact and its anticipated duration and context. Quantitative data are used to provide additional detail where possible.

3.4. Air Resources

Air resources in the Planning Area are described in Section 2.1 of the AMS. Air resources include climate, which is discussed in Section 2.1.1 of the AMS, and air quality, air quality related values (visibility/regional haze and atmospheric deposition), and climate change, which are discussed in Section 2.1.2 of the AMS. Air resources are also described in Appendix L, Air Quality Baseline.

3.4.1. Affected Environment

The Shash Jáa and Indian Creek Units experience wide temperature variations between seasons, and the climate varies widely with altitude. The average annual precipitation is 13.9 inches, with higher elevations receiving more precipitation in the form of snow. Summer high temperatures in the upper elevations often reach 85°F, with lows in the 50s. Lower-elevation high temperatures can reach over 100°F. Winters are cold, with highs averaging 30°F to 50°F and lows averaging 0°F to 20°F (AMS Section 2.1.1).

Air quality in the Planning Area is generally good, with the area in attainment or unclassified for all of the national ambient air quality standards (NAAQS) (EPA 2018a). There are no State air monitoring stations in or near the Planning Area (Utah Department of Environmental Quality 2017). Data collected at the Federal monitoring station in Canyonlands National Park, approximately 20 miles northwest of the Indian Creek Unit, and at the Dark Canyon monitoring station on USFS-administered lands, show that recent ozone concentrations remain below the NAAQS (AMS Section 2.1.2.1.7; EPA 2018b). Visibility at Canyonlands National Park remained relatively unchanged on the 20% clearest days and improved on the 20% haziest days from 2006 to 2015 (AMS Section 2.1.2).

The primary pollutants of concern near the Planning Area are particulate matter and ozone (AMS Section 2.1.2). The EPA's 2014 National Emissions Inventory shows that area sources are the largest emitters of

particulates in San Juan County. Oil- and gas-related sources are the largest human-made emitters of volatile organic compounds, while biogenics are the largest overall source of these emissions. On-road mobile sources are the largest emitters of nitrogen oxides (AMS Section 2.1.2, Table 2-8).

Greenhouse gases (GHGs) in and near the Planning Area, including carbon dioxide and nitrous oxide, come primarily from combustion of fossils fuels (AMS Section 2.1.2). Methane, another GHG, comes from agricultural operations, including livestock grazing, as well as the combustion of fossil fuels.

Climate change trends and forecasts are found in AMS Section 2.1.2. As described in this section, the Indian Creek Unit shows primarily very low to moderate potential for long-term climate change, with the exception of the southern portion of the unit, which has a very high potential. The Shash Jáa Unit shows moderate to very high potential for long-term climate change (AMS Section 2.1.2 and Maps 3 and 4).

3.4.2. Environmental Consequences

This section discusses the potential effects of decisions and management actions on air resources. Indicators of impacts on air resources are as follows:

- Change in potential for vegetation treatments each year
- Change in potential for prescribed fire per year by vegetation type
- Change in permitted animal unit months (AUMs)
- Change in amount of area open to OHV use

Assumptions for the analysis of impacts on air resources are as follows:

- Prescribed burning would follow Utah Smoke Management Plan (State of Utah 1999, as revised) regulations and permit conditions

3.4.2.1. DIRECT AND INDIRECT IMPACTS

Vegetation treatments would be applied on a case-by-case basis under all alternatives. Vegetation treatments would include a variety of treatment methods, including mechanical, chemical, and prescribed fire treatments. Each of these treatment methods would result in short-term, direct impacts on air quality through the emission of criteria air pollutants from equipment use, chemical use, and prescribed fire, with the greatest emissions occurring from prescribed fire. Prescribed fire is regulated by the State through the Utah Smoke Management Program. This program limits the conditions and timing under which prescribed fire can occur; therefore, complying with these provisions would ensure that prescribed fire treatments would continue to minimize air quality impacts on downwind locations and would not contribute to a change in attainment status for any NAAQS.

Over the long term, vegetation treatments that decrease woody plants and increase grasses and forbs could reduce impacts on air quality from wildfire by decreasing fuel loads, resulting in less area burned and less-intensive fire in areas where these treatments occurred. Maintaining or restoring vegetation communities to meet their ecological site potential would have indirect, long-term impacts to the extent that vegetation management creates more resilient vegetation communities that are less prone to wildfire.

Sources of emissions related to livestock grazing and livestock grazing management are combustion sources, such as vehicles used by ranchers to access their allotments and by the BLM and USFS for administration of grazing allotments, construction equipment used in structural range improvements, and equipment used in nonstructural range improvements, such as mechanical vegetation treatments. Another source of air pollutants are particulate emissions (PM_{10} and $PM_{2.5}$) from surface disturbance and wind erosion. Particulate matter is directly emitted as a result of ground-disturbing activities and vehicular traffic on unpaved roads and surfaces. It is indirectly emitted through windblown dust in areas susceptible to wind erosion. Surface-disturbing activities (e.g., trampling) or structural range improvements that remove plant communities, can indirectly affect air resources; however, management to meet or make progress toward Utah rangeland health standards (BLM 1997) or USFS desired condition for rangelands would reduce these indirect impacts over the life of this plan. Grazing is not a significant source of air pollutant emissions in BENM, and measurable impacts would be the same under all alternatives. Livestock grazing and agricultural operations are a source of methane, a GHG. In the United States, these sources account for approximately 9% of total GHG emissions (EPA 2018a). GHG emissions can be estimated based on AUMs

projected for an alternative. Based on the AUMs for allotments partially or wholly within the Planning Area (see Section 3.9), GHG emissions from livestock grazing would be similar for Alternatives A, C, D and E and less than current management for Alternative B. However, all action alternatives would have fewer acres available (BLM)/suitable (USFS) to livestock grazing than Alternative A, which would result in fewer GHG emissions from livestock grazing than current management.

OHVs are generally limited to designated roads and trails throughout the Planning Area. OHVs generate criteria pollutant emissions through the combustion of fuels, although particulate emissions (fugitive dust) from travel on unpaved roads are a greater source of air quality impacts in the Planning Area. Fugitive dust from travel on unpaved roads and trails would continue to have localized impacts on air quality; these impacts may increase over time with expected increases in visitor use levels. Alternatives A, C, D, and E would make similar amounts of area available to OHV use, and, consequently, measurable impacts from particulate matter (dust) and vehicle emissions would be similar. Alternative B would close certain areas to OHV use compared with Alternative A. Approximately 13 miles of routes in the Indian Creek Unit (compared with 0 mile under Alternative A) and 54 miles in the Shash Jáa Unit (compared with 5 miles under Alternative A) would be located in areas closed to OHV use; fugitive dust related impacts would be reduced in closed areas as compared with Alternative A.

Under all action alternatives, the BLM would apply new BMPs to minimize negative environmental impacts from management actions. Section 1.1 in Appendix I describes BMPs for air resources, including measures to reduce fugitive dust, minimize surface disturbance, and reduce engine exhaust emissions. Application of BMPs at the site-specific level would minimize the impacts of management actions on air quality.

In addition to applying BMPs, under all action alternatives the BLM would implement a monitoring strategy and adaptive management approach (see Appendix M). This strategy identifies indicators of resource health and triggers for which management actions should be taken to improve these indicators. For air resources, these indicators include air quality, GHG and criteria pollutant emissions, and climate. Through this approach, the BLM and USFS would ensure that the objectives of the MMPs for air resources and objects for which air quality is an important component are being met.

3.5. Cultural Resources

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. Archaeological resources are areas where prehistoric or historic activity altered the earth or where deposits of physical remains are discovered. Prehistoric cultural resources are those materials deposited or left behind before the general historic period (the time recorded by Euro-American history in Utah). Historic cultural resources are those materials deposited or left behind during the general historic period. Architectural resources include standing structures of historic value. Traditional resources can include archaeological resources, structures, topographic features, habitats, plants, wildlife, and minerals that American Indians or other groups consider essential for the preservation of traditional culture and traditional values. Traditional values of living communities can be manifested at locations called traditional cultural properties (TCPs), American Indian sacred sites, or cultural landscapes.

The importance of cultural landscapes in the Planning Area is demonstrated by the number of such landscapes specifically mentioned in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681. The National Park Service—who manages the National Register of Historic Places—recognizes four types of cultural landscapes (Birnbaum 1994:2). Historic designed landscapes are those that were consciously designed by a landscape architect, gardener, or horticulturalist according to planned design principles; whereas as historic vernacular landscape is one that evolved through use by people whose use and activity shaped that landscape. A historic site is a landscape significant for its association with an important place, event, or person. An ethnographic landscape contains any variety of natural or cultural resources that associated people define as heritage resources. Important cultural landscapes known or expected in the Planning Area are generally historic vernacular landscapes (e.g., historically important ranching, mining, and farming landscapes as well as landscapes important to Native American and Euro-American pioneer descendant communities) or ethnographic landscapes (e.g., many springs,

seeps, and water sources among other natural landforms as well as named landscapes such as the Bears Ears Buttes, Elk Ridge, and Indian Creek).

Some American Indian Tribes also consider paleontological resources to be cultural resources; paleontological resources are discussed in Section 3.10. American Indian Tribes may also identify natural features (e.g., hoodoos, arches, and canyons) as cultural resources, which may necessitate appropriate management actions for these features.

For the purposes of describing the affected environment for cultural resources and analyzing the environmental consequences of the alternative MMPs, the analysis area for direct and indirect impacts includes the entirety of the Planning Area. The rationale for selecting the Planning Area as the cultural resources analysis area is that management decisions analyzed would be applicable only to those resources found within the Planning Area boundaries.

3.5.1. Affected Environment

3.5.1.1. CULTURAL HISTORY

The Planning Area features a variety of environmental settings with diverse resources that have been used by humans for millennia. The region contains a diverse collection of prehistoric archaeological sites, historic archaeological sites and localities, and locations of religious and cultural significance to American Indian Tribes. The discussion that follows is informed substantially by a recent summary and synthesis of cultural resources information available for the entire BLM MFO (Cannon et al. 2017). Additional information about cultural resources in the Planning Area is included in Section 2.2 of the AMS.

3.5.1.1.1. Prehistoric Culture History

Prehistoric occupation of North America began at or near the end of the Pleistocene sometime prior to 12,000 years ago. In southeastern Utah and elsewhere across the Colorado Plateau, this cultural period is referred to as the Paleoindian period and is characterized in large part by highly mobile hunting and gathering lifeways (Cordell 1997).

Archaic period sites date between ca. 6000 B.C. and ca. 1500 B.C. The beginning of the Archaic period corresponds to the full onset of the Holocene epoch, marked by climatic changes that brought warmer, drier conditions generally like those of the present day. This period is characterized by artifacts that reflect a change in subsistence strategies from a focus on big game hunting to a greater reliance on a broad spectrum of faunal and floral resources (Simms 2008). By the end of the Archaic period, maize was introduced to at least some parts of the Northern San Juan region of the Colorado Plateau (Cordell 1997).

Throughout much of North America, Archaic period cultures gave way to corn-based horticulture and village-based habitation patterns known as the Formative period. Formative cultures are recognized by a radical change in subsistence and settlement strategies, with a clear focus on farming corn, squash, and beans (Burrillo 2017). In the Northern San Juan region, the Formative cultures are referred to as *Anasazi* or *Ancestral Puebloan*, and are dated to the interval between 1500 B.C. and A.D. 1300. In the analysis area, Formative period Ancestral Puebloan sites are further subdivided by temporal, behavioral, and material differences into five periods: Basketmaker II, Basketmaker III, Pueblo I, Pueblo II, and Pueblo III (Bocinsky et al. 2016; Cordell 1997). Each of these periods is characterized by differences in the settlement system, subsistence practices, and residential dwelling characteristics.

The Late Prehistoric to Protohistoric period (A.D. 1300–1880) spans the time between the Pueblo III period until Euro-American use and settlement of the area (Varien 2010). By the late 1600s, both Nuche peoples (Numic-speaking ancestors of modern Ute and Paiute peoples) and Diné peoples (Athapaskan-speaking ancestors of the modern Navajo) resided in the area. These groups left an ephemeral archaeological record, and considerably less is known about their early lifeways.

3.5.1.1.2. Historic Culture History

Spanish territorial claims included what is now San Juan County, Utah, as a part of New Mexico Province. In 1765, Governor Tomás Vélez de Cachupín allowed Juan Maria Antonio de Rivera to proceed northward to locate a crossing on the Colorado River, gauge the attitudes of the native inhabitants toward the Spanish, and investigate claims of silver and other precious metals in the area (Aton and McPherson 2000).

By the early 1800s, trappers and traders from the United States began to operate in New Mexico Province. The intensification of trade and trapping throughout the region required the establishment of a trail network that would connect the hinterlands of New Mexico Province with population centers to the southeast (McPherson 1995). By the 1830s, informal routes were incorporated into the Old Spanish Trail. This route entered what is now modern-day Utah, just east of Monticello, and continued north through Dry Valley toward Moab; one part of the route lies approximately 20 miles from the Indian Creek Unit.

In 1854, the Church of Jesus Christ of Latter-day Saints dispatched William Huntington and Jackson Stewart to explore the Four Corners region for the possible expansion of Brigham Young's burgeoning religious state of Deseret. Cattle were first grazed in the valleys of the region in 1874 as ranchers spread into the area from the north, east, and south. The United States made its first indication of territorial interest by sending U.S. Geological Survey (USGS) teams in 1875, led by James L. Gardiner and Henry Gannet under the direction of Ferdinand V. Hayden, to survey the La Sal Mountains (McPherson 1995).

By 1879, the church dispatched a wagon train of colonizers from Escalante for the purpose of establishing a mission in southeastern Utah and converting the native inhabitants (McPherson 1995). A portion of their route, known as the Hole-in-the-Rock Trail, is preserved in the southern end of the Shash Jáa Unit, including San Juan Hill, the location of the trail's crossing point over Comb Ridge.

3.5.1.1.3. Ethnographic Resources

Throughout the Prehistoric and Historic periods described academically by archaeologists and historians, American Indian peoples have called the region home. The histories and concerns of these individual Tribes and Tribal groups are detailed and complex. Ethnographic studies that describe these complex histories, while abundant, are not complete and do not fully articulate the myriad Tribal concerns. Tribes that may ascribe religious or cultural values to the analysis area include, but are not limited to, the Ute Indian Tribe of the Uintah and Ouray Reservation; the Ute Mountain Ute Tribe, whose members live primarily in southwestern Colorado and the community of White Mesa in southeastern Utah; the Paiute Indian Tribe of Utah; the Hopi Tribe; the Navajo Nation; the Pueblo of Zuni; the Pueblo of Jemez; the Pueblo of Zia; and the Pueblo of Acoma. Additional details regarding American Indian Tribal associations in the Planning Area are provided in Sections 2.2.1.4 through 2.2.1.11 of the AMS.

3.5.1.2. CURRENT CONDITIONS

3.5.1.2.1. Shash Jáa Unit

In all, 8,022 acres (8.2%) of the BLM-administered lands in the Shash Jáa Unit has been surveyed for cultural resources based on all known previous surveys. Survey results documented 991 known archaeological sites (a known site density of one site every 8.1 acres). Projecting this density across the Unit, there could be an estimated 12,023 sites on BLM-administered lands in the Shash Jáa Unit. The Butler Wash archaeological district and Moon House complex, both listed on the NRHP, are in the Unit.

On the 32,587 acres of USFS-administered lands in the Shash Jáa Unit, 11,060 acres (34%) have been surveyed for cultural resources. Currently, 750 sites (23% of known sites in the USFS Monticello Ranger District) are located in the USFS-administered portion of the Shash Jáa Unit.

Archaeological sites are not evenly distributed across the landscape, and the likelihood of discovering a previously undocumented site varies across each Unit of the Planning Area. In 2017, a comprehensive summary and synthesis of available cultural resources information was prepared for the BLM MFO (Cannon et al. 2017). As part of this effort, archaeologists developed a site location model that provides the likelihood for the presence of an archaeological site at any given spot across the model area. The relative likelihood for the presence of a site is called *archaeological sensitivity*. Areas with a high probability for the presence of archaeological sites are considered more sensitive than those with a low probability for the presence of sites. The areas with high, medium, and low probability for finding an archaeological site in the Shash Jáa Unit are shown in Table CUL-1. This model provides an effective way to determine the potential effects of landscape-level management decisions on cultural resources. Any future projects that may impact cultural resources would be required to analyze and disclose the presence of and potential impacts to cultural resources at the site-specific level.

Table CUL-1. Archaeological Sensitivity in the Shash Jáa Unit

	High Probability	Medium Probability	Low Probability	Total
Archaeological sensitivity in the Shash Jáa Unit (acres)	65, 917 (46%)	52,253 (37%)	24,375 (17%)	142,545

Note: An area covering 164 acres in the Shash Jáa Unit is outside of the model area and is not included in the acreage reported here.

3.5.1.2.2. Indian Creek Unit

The BLM-administered land in the Indian Creek Unit contains 103 known archaeological sites, and 10,572 acres (14.7% of the unit) has been surveyed for cultural resources based on all known previous surveys. There is a known site density of one site every 102.6 acres. Projecting this density across the unit, there could be an estimated 700 sites on BLM-administered lands in the Indian Creek Unit. Newspaper Rock is listed on the NRHP as Indian Creek State Park. The areas with high, medium, and low probability for finding an archaeological site in the Indian Creek Unit are shown in Table CUL-2.

Table CUL-2. Archaeological Sensitivity in the Indian Creek Unit

	High Probability	Medium Probability	Low Probability	Total
Archaeological sensitivity in the Indian Creek Unit (acres)	8,022 (9%)	40,256 (47%)	38,170 (44%)	86,447

The Shay Canyon ACEC, located in the Indian Creek Unit, was designated as such partially because of cultural resource values, especially significant panels of rock writings with Archaic and Puebloan motifs.

3.5.1.2.3. Traditional Cultural Properties, American Indian Sacred Sites, and Cultural Landscapes

American Indian Tribes have identified several places of importance through past consultation with the USFS and the BLM, although none has been formally designated as a TCP or listed on the NRHP yet. These places are part of larger landscapes of sacred geography that are interrelated and linked to Tribal stories and history. Several site types, both archaeological and non-archaeological, could be identified by American Indian or other living communities as TCPs, American Indian sacred sites, or cultural landscapes.

As noted above, many American Indian Tribes claim affiliation with the prehistoric archaeological sites in the Shash Jáa and Indian Creek Units. Several Pueblos, including the Pueblo of Acoma, have provided information to the BLM regarding culturally important archaeological localities in and around the Monument. Physical locations, however, need not be known to be important. The Hopi Tribe, for example, asserts that often the exact locations of some of these places, such as ancestral archaeological sites and burials, are unknown to Tribes until these sites are identified by Hopi cultural experts during ethnographic or ethnohistoric investigations or archaeologists during archaeological investigations of a given study area.

Non-archaeological site types are distinguished from archaeological site types to discuss places that are not necessarily associated with prehistoric or historic artifact assemblages and collections. Some common site types are lakes, seeps, and springs; land features; and traditional gathering or collection areas. Tribes have emphasized the importance of the association between plant communities, landforms, and landscape features, as well as the connection between archaeological sites and these features.

The Navajo Nation has formally identified the Bears Ears Buttes (Shash Jáa) as a TCP. The area is associated with five ceremonies and with the collection of plant medicines for the relief of specific ailments or for ceremonial practices. In addition, chanters conduct ceremonies there on behalf of individual Navajos as well as the Navajo Nation as a whole. The Ute ascribe importance to the Bears Ears as the first place where bears came out of hibernation in the spring and where the Ute held the first Bear Dance. The area is very important to the Hopi.

The Navajo Nation formally identified Elk Ridge as a TCP, and it is also associated with five ceremonies. This area has long been of importance to Navajo families and served as a refuge during the mid-1800s. Navajos gather a wide variety of plants in this area, including saltbush, three-leaf sumac, sacaton, sand grass, pinyon nuts, juniper berries, wild cherries, wild potatoes, and yucca fruit.

Cultural landscapes mentioned in Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, include both historic vernacular and ethnographic landscapes. These include the larger Arch Canyon cultural landscape, Texas Canyon cultural landscape, Butts Canyon cultural landscape, Mule

Canyon cultural landscape, Whiskers Draw cultural landscape, Milk Ranch Point cultural landscape, Indian Creek cultural landscape, Bears Ears Buttes, Bears Ears headwaters, Comb Ridge, and Hole-in-the-Rock Trail.

3.5.1.2.4. Cultural Resource Objects and Values

In general, important cultural resource objects in the Planning Area are cultural resource sites eligible for or listed on the NRHP, including, but not limited to, cliff dwellings, granaries, kivas, ceremonial sites, pit houses, storage pits, lithic scatters, prehistoric campsites, rockshelters, baskets, manos, metates, pottery, bows and/or arrows, footwear, storage rooms, tinajas, prehistoric road systems, Moki steps, and rock writings (petroglyphs and pictographs), as well as evidence of the historic settlement of the region, including the Hole-in-the-Rock Trail, cabins, corrals, trails, and historic rock inscriptions. Important cultural resource objects in the Planning Area can also include cultural resources that are not eligible for or listed on the NRHP but that have cultural value to American Indians and other traditional communities.

Cultural, archaeological, or historical objects in the BENM include the Butler Wash Kachina panel, Butler Wash Site, Arch Canyon Great House Complex (which includes the Arch Canyon Great House) and the larger Arch Canyon cultural landscape, House on Fire site, Texas Canyon cultural landscape, Butts Canyon cultural landscape, Mule Canyon cultural landscape, Whiskers Draw cultural landscape, Milk Ranch Point cultural landscape, Moon House Complex, Doll House, Newspaper Rock, Shay Canyon rock writings, Indian Creek cultural landscape, Bears Ears Buttes, Bears Ears headwaters, Comb Ridge, medicinal plants and plants for religious use, Hole-in-the-Rock Trail and San Juan Hill, and American Indian sacred and religious sites.

Important Monument values include opportunities for archaeological research, interpretation, and protection; cultural landscapes; the preservation of prehistoric, historic, and cultural values and objects; the provision of subsistence activities (e.g., hunting and gathering); Tribal expertise and traditional ecological and historical knowledge; areas of religious use; opportunities for American Indian and historic rural communities to conduct subsistence activities (e.g., hunting, gathering, and wood cutting); native stories and traditional historical knowledge (e.g., the Navajo Long Walk); opportunities to use traditional, ecological, and religious knowledge and practices; American Indian and Euro-American livestock grazing, including the use of old structures (e.g., old log troughs); and opportunities for cultural and heritage tourism.

3.5.2. Environmental Consequences

3.5.2.1. ANALYSIS METHODS

The primary indicator for effects to cultural resources is whether there is a potential loss of or damage to characteristics that qualify the resource for listing on the NRHP or that would diminish the cultural value of areas important to American Indian or other traditional communities. In this context, effects to the integrity of a resource are the key consideration. Integrity refers to the ability of a site or property to convey its significance. For prehistoric and historic archaeological sites that are generally considered eligible for the NRHP because of their potential to provide important data, integrity is principally related to the condition of a site's intact cultural deposits and associated constructed features. For this reason, management actions that permit surface disturbance may affect site integrity, as would management actions that facilitate changes in access to archaeological locations. For the purposes of this analysis, it is assumed that setting and feeling are the main elements of integrity important to TCPs, American Indian sacred sites, and cultural landscapes and that surface disturbance or changes to access would affect a locality's integrity by affecting its setting or feeling. Accordingly, the same management actions that may affect archaeological sites—surface disturbance and changes to access—are those that may also affect locations important for their traditional values.

For the purposes of this analysis, the acreages of areas with high, medium, and low probability for the presence of archaeological sites, as well as the numbers of known archaeological localities, are assessed in areas subject to management actions that may facilitate surface disturbance or changes in access. As described in Sections 3.5.1.2.1 and 3.5.1.2.2, the sensitivity of an area to potential effects based on the likelihood for the presence of archaeological sites is assessed using an archaeological site location sensitivity model developed for the BLM MFO (Cannon et al. 2017). This site location model was developed using all available archaeological site and archaeological survey location information. These data were

analyzed alongside a suite of environmental characteristics and the characteristics of each archaeological site itself to develop a model that shows the likelihood for the presence of an archaeological site at any given location across the model area. This model does not show the presence or absence of an archaeological site but rather the probability for a site to be present, given the characteristics of a location relative to the characteristics of other locations across the model area. The counts of known archaeological localities presented here are taken from those data (Cannon et al. 2017).

With few exceptions, TCPs, American Indian sacred sites, and cultural landscapes are generally not documented, and, for this reason, the potential effects from management actions to these resources are evaluated qualitatively.

There are overlapping Tribal interests regarding cultural resources in the Planning Area. These overlapping interests would be addressed through Tribal consultation efforts and consultation with the Shash Jáa Commission, as well as through implementation of the monitoring and adaptive management approaches described in Appendices D, E, and F.

The following assumptions were used during the analysis of impacts to cultural resources:

- The archaeological site location sensitivity model used in this analysis adequately represents the likelihood for the presence of an archaeological site at a given location in the Planning Area and can be compared with proposed management actions to produce a quantifiable assessment of risks to cultural resources at a landscape scale.
- Management actions that restrict surface disturbance or that reduce unrestricted access generally prevent, reduce, or eliminate impacts to the integrity of cultural resources (Hedquist et al. 2014; Nickens et al. 1981; Spangler et al. 2006).
- The requirements of the NHPA (Public Law 89-665 and 54 USC 300101 et seq., as amended) and its implementing regulations (typically referred to as the Section 106 process) would be used to identify historic properties, evaluate them for adverse effects, and resolve any adverse effects at an implementation-level (site-specific) basis for all lands in the Planning Area.

3.5.2.2. DIRECT AND INDIRECT IMPACTS

Direct impacts to cultural resources from implementation-level projects can often be resolved with site-specific consultation and planning by implementing specific measures to avoid, minimize, or mitigate those impacts through the NHPA Section 106 process (which is required of implementation-level projects). Such measures result in an increased understanding of cultural heritage. Stabilization and hardening of sites is considered a beneficial effect because the physical deterioration of the site is minimized, and often such stabilization provides opportunities for public education that may not have been present before. Indirect impacts to cultural resources have a greater range of outcomes. For example, the introduction of a visually incompatible element adjacent to a TCP would likely have an adverse impact; however, transient auditory impacts may have very little indirect impact to the integrity of a site. In general, all action alternatives would have less potential for surface disturbance and therefore less potential to impact cultural resources than Alternative A. Additionally, the action alternatives include more management actions that would address potential impacts on cultural resources (e.g., more active management of recreational use of the BENM) and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.1.2).

3.5.2.2.1. Impacts from Cultural Resources Management Actions

Management actions common to all action alternatives for cultural resources include several management actions that would have the potential to directly or indirectly impact cultural resources. All action alternatives would implement an activity-level cultural resources management plan, a Cultural Resources Monitoring Framework (Appendix D), Cultural Resources Allocation Criteria and Management Strategies (Appendix E), and an American Indian Tribal Collaboration Framework (Appendix F), all of which would help to better address the proper care and management of cultural resources in comparison to Alternative A. The preparation of a cultural resources management plan for the Planning Area would provide detailed guidance to the agencies regarding cultural resources protections appropriate for project-specific management actions. Implementation of restrictions for camping, domestic pets, and pack animals would

minimize the risk to important resources from these agents. The agencies would work to reduce fuels and mitigate hazards to important cultural resources from prescribed or wildland fire, thus minimizing the potential for surface disturbance and loss of susceptible standing structures. Agencies would conduct Class III archaeological inventories as funding permitted, prioritizing areas where patterns of Public Use suggest the potential for impacts related to increased visitation, thereby triggering consideration of those impacts through the implementation of the cultural resources management plan. Several important localities identified as having key Monument objects would be developed as Public Use sites, setting the stage for potential site hardening and/or development of public interpretive materials. A process would be set in place for the agencies, in consultation with American Indian Tribes, the Shash Jáa Commission or comparable entity, the Monument Advisory Committee, and the public as appropriate, to formally allocate individual sites, as needed, to one or more allocation types for consideration of management actions.

Although American Indian Tribes and local communities have identified several places of importance through past consultation with the USFS and the BLM, none has yet been formally designated as a TCP or listed on the NRHP. A stated goal of management actions common to all alternatives is to identify and evaluate potential TCPs, American Indian sacred sites, and cultural landscapes. Moreover, the cultural resources management plan would explicitly provide standard methods for identifying and evaluating such landscapes. Establishment of standard methods and an explicit goal to identify and evaluate cultural landscapes would significantly enhance current and ongoing efforts by the USFS and the BLM to effectively manage those resources. One difficulty in effectively managing cultural landscapes is that the edges of cultural landscapes often do not match administrative boundaries, creating a situation where management actions in one area cause both direct and indirect impacts to the landscape as a result of varied management prescriptions across the administrative boundary. The overall impact of this disparity, however, is greatly ameliorated by thorough documentation of cultural landscapes and their component elements and by ongoing coordination and consultation with associated groups. Both actions—careful documentation and ongoing consultation—are aspects of management actions common to all alternatives.

Two sets of management actions considered in the alternatives, both related to recreation activities, may differentially impact cultural resources. The first set of alternative management actions addresses climbing routes and associated access trails. There is no current management for this issue under Alternative A. Under Alternatives C, D, and E, climbing routes and access trails would be monitored for direct and indirect impacts to cultural resources. If such impacts were observed, the agencies would work to educate users in “tread lightly” principles and encourage self-regulation to minimize impacts. Under Alternatives B and E, the agencies would monitor for impacts to cultural resources but would have at their disposal the option to close routes or implement mitigation to avoid impacts to cultural resources. Under the action alternatives, monitoring for impacts would alert agencies to such effects. Alternatives C, D, and E, with education and self-regulation, are likely to minimize further impact, whereas Alternatives B and E, with route closures or mitigation, would effectively avoid any additional impacts.

The second set of management actions that could directly or indirectly affect cultural resources addresses hiking trails in Shay Canyon. Under Alternative A, hiking would be limited to designated trails with the exception of side canyons. Under Alternative D, trails would remain open to casual use, and development of new trails would be allowed if they provide access for Traditional Uses. Under Alternative E, hiking would be limited to designated trails in Shay Canyon and hiking trails would continue to be open to casual use. Alternatives C and E would implement a monitoring program to evaluate the changing conditions of cultural resources resulting from hiking trail access. Consequences for discovery of impacts through monitoring could include site hardening or trail closure, and education to inform casual users of the importance of not impacting sites. Monitoring would alert agencies to ongoing impacts to cultural resources. Alternatives C and E would close hiking routes if monitoring indicates ongoing impacts to cultural resources even after other protection measures are implemented. Site hardening, trail reroutes, and other options available under Alternatives C and E would help minimize and, in some instances, avoid impacts to sites because of hiking trails. Trail closure, as stipulated under Alternative B, would effectively avoid additional impacts to cultural resources.

3.5.2.2.2. Impacts from Fire Management Actions

Potential impacts on cultural resources from fire management decisions would be primarily the result of fuels reduction and fire suppression activities because both can cause surface disturbance or damage to or loss of historic structures and other cultural sites. Increased human presence and unintentional identification of cultural sites during fuels reduction and fire suppression activities could also increase the potential for looting of cultural sites through, for example, the creation of so-called tree islands that indicate the presence of a cultural site.

Management actions common to all action alternatives for fire management would provide consideration for cultural resources in establishing priorities for all aspects of fire management. By making cultural resources a priority consideration in all fire management decisions, the impacts to cultural resources by fire would be minimized to the greatest extent possible. Section 1.2 of Appendix I includes BMPs that would be applied under all action alternatives during fire management activities to address potential impacts to cultural resources, including activities that avoid or minimize creation of tree islands; examples of such activities are buffering the sites by 15 meters and including cultural sites within feathered edges of treatments. Additionally, hazardous fuels reduction treatments would be used to protect cultural resources that are susceptible to impacts by wildland fire.

There are no management actions specifically related to cultural resources in fuels management under Alternative A. Under Alternatives D and E, cultural sites in planned fuels management areas would be pretreated to minimize or avoid impacts. Under Alternative C, fuels management projects would be limited to areas exhibiting one or more characteristics that include sensitive cultural resources. Alternatives C, D, and E would likely minimize impacts to cultural resources. Under Alternative B, fuels management would be allowed as described in Alternatives D and E, but treatment of significant historic or prehistoric properties eligible for or listed on the NRHP would be allowed using hand or chemical methods only. Limiting treatment of NRHP–eligible or NRHP–listed sites to these methods would effectively eliminate the risk of inadvertent fire impacts to cultural resources.

3.5.2.2.3. Impacts from Lands and Realty Management Actions

Impacts to cultural resources from lands and realty decisions may result from ROW grants that facilitate other surface-disturbing activities. A ROW grant could also lead to indirect impacts to cultural resources if the purposes of the grant were to introduce an incompatible visual feature or provide new access. Areas closed to ROWs generally would provide greater protections for cultural resources.

Management actions common to all action alternatives for lands and realty indicate that project decisions would not be made that would adversely impact American Indian sacred sites or significant historic or prehistoric properties listed on or eligible for the NRHP. Such management actions would effectively avoid, minimize, or require appropriate mitigation for potential adverse impacts.

Among the lands and realty alternatives for the Indian Creek Unit, Alternatives C, D, and E provide for different ROW exclusion areas and Alternative B names the entirety of the Unit a ROW exclusion area. For the Shash Jáa Unit, Alternatives D and E would designate the Unit as an avoidance area with limited exceptions for exclusion and open areas; Alternative C names the entire Unit a ROW exclusion area but provides a mechanism for an applicant to request a waiver; and Alternative B names the entire Unit a ROW exclusion area. Table CUL-3 provides the total high, medium, and low areas of archaeological sensitivity available for ROWs and indicates what percentage of each sensitivity are open, avoidance, or exclusion under each alternative. Numbers of known cultural localities in each Unit that would be available for ROW applications under each action alternative are given in Table CUL-4. In general, all action alternatives would have fewer archaeologically sensitive areas and known cultural localities available for ROWs than Alternative A. Alternatives B and C would have the fewest archaeologically sensitive areas open for ROWs and Alternatives D and E have the most archaeologically sensitive areas in ROW avoidance areas.

Table CUL-3. Archaeological Sensitivity in Areas Available (Avoidance and Open) or Closed (Exclusion) for Rights-of-Way

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open: Indian Creek Unit (acres)	High: 6,387 (80%) Medium: 31,547 (78%) Low: 26,884 (72%)	High: 0 Medium: 0 Low: 0	High: 0 Medium: 0 Low: 0	High: 5,914 (74%) Medium: 30,943 (77%) Low: 27,493 (72%)	High: 5,914 (74%) Medium: 30,943 (77%) Low: 27,493 (72%)
Avoidance: Indian Creek Unit (acres)	High: 9 (<1%) Medium: 114 (>1%) Low: 656 (2%)	High: 0 Medium: 0 Low: 0	High: 3,075 (38%) Medium: 19,945 (50%) Low: 20,148 (53%)	High: 496 (6%) Medium: 1,118 (3%) Low: 814 (2%)	High: 496 (6%) Medium: 1,118 (3%) Low: 814 (2%)
Exclusion: Indian Creek Unit (acres)	High: 25 (<1%) Medium: 1,331 (3%) Low: 4,943 (13%)	High: 6,419 (80%) Medium: 32,991 (82%) Low: 32,483 (85%)	High: 3,351 (42%) Medium: 13,076 (32%) Low: 12,339 (32%)	High: 10 (<1%) Medium: 929 (2%) Low: 4,176 (11%)	High: 10 (<1%) Medium: 929 (2%) Low: 4,176 (11%)
Open: Shash Jáa Unit (acres)	High: 35,158 (53%) Medium: 30,990 (59%) Low: 22,065 (91%)	High: 0 Medium: 0 Low: 0	High: 0 Medium: 0 Low: 0	High: 822 (1%) Medium: 669 (1%) Low: 7 (<1%)	High: 822 (1%) Medium: 669 (1%) Low: 7 (<1%):
Avoidance: Shash Jáa Unit (acres)	High: 21,177 (32%) Medium: 14,718 (28%) Low: 784 (3%)	High: 0 Medium: 0 Low: 0	High: 1,389 (2%) Medium: 875 (2%) Low: 91 (<1%)	High: 54,947 (83%) Medium: 44,619 (85%) Low: 22,818 (94%)	High: 54,947 (83%) Medium: 44,619 (85%) Low: 22,818 (94%)
Exclusion: Shash Jáa Unit (acres)	High: 2,558 (4%) Medium: 2,669 (5%) Low: 1,032 (4%)	High: 58,327 (88%) Medium: 47,973 (92%) Low: 23,862 (98%)	High: 26,936 (41%) Medium: 47,086 (90%) Low: 23,766 (98%)	High: 2,556 (4%) Medium: 2,672 (5%) Low: 1,032 (4%)	High: 2,556 (4%) Medium: 2,672 (5%) Low: 1,032 (4%)

Table CUL-4. Known Cultural Localities in Areas Available (Avoidance and Open) or Closed (Exclusion) for Rights-of-Way

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open: Indian Creek Unit (count)	247	0	0	216	216
Avoidance: Indian Creek Unit (count)	20	0	242	60	60
Exclusion: Indian Creek Unit (count)	1	267	25	0	0
Open: Shash Jáa Unit (count)	1,099	0	0	22	22
Avoidance: Shash Jáa Unit (count)	995	0	43	2,025	2,025
Exclusion: Shash Jáa Unit (count)	32	2,093	2,070	32	32

3.5.2.2.4. Impacts from Livestock Grazing Management Actions

Impacts to cultural resources from improper livestock grazing may include trampling of artifacts and of features.

Management actions common to all action alternatives for livestock grazing note that range improvement activities would avoid cultural resources and would also avoid taking management actions that would concentrate livestock on cultural sites. Additionally, if the monitoring of grazing activity indicates impacts to cultural resources, then mitigation measures would be adopted.

The action alternatives for livestock grazing specify several areas that would be unavailable (BLM)/not suitable (USFS) for grazing, and these areas vary by alternative. Table CUL-5 provides the total high, medium, and low areas of archaeological sensitivity available (BLM)/suitable (USFS) for grazing and indicates what percentage of each sensitivity are available (BLM)/suitable (USFS) for grazing under each alternative. Numbers of known cultural localities in each Unit that would be available (BLM)/suitable (USFS) for grazing under each action alternative are given in Table CUL-6. For both the Indian Creek Unit and the Shash Jáa Unit, Alternative B exposes fewer acres of high and medium probability area to livestock grazing than any other alternative. Areas available (BLM)/suitable (USFS) for livestock grazing in high and medium probability areas under Alternatives C through E are generally similar to that under Alternative A; however, Alternatives C, D, and E would somewhat reduce impacts on cultural resources by making additional areas unavailable (BLM)/not suitable (USFS) to livestock grazing compared to Alternative A, and by implementing additional management actions (e.g., providing additional land use plan direction regarding livestock grazing and potential impacts on cultural resources) that would reduce impacts on cultural resources compared to Alternative A. Alternative B contains the fewest number of known cultural localities in areas open to livestock grazing in both units.

Table CUL-5. Archaeological Sensitivity in Areas Available (BLM)/Suitable (USFS) for Livestock Grazing

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Indian Creek Unit (acres)	High: 6,367 (79%) Medium: 31,314 (78%) Low: 26,957 (71%)	High: 816 (10%) Medium: 11,081 (28%) Low: 13,736 (36%)	High: 6,367 (79%) Medium: 31,322 (78%) Low: 26,957 (71%)	High: 6,366 (79%) Medium: 31,350 (78%) Low: 26,970 (71%)	High: 6,366 (79%) Medium: 31,350 (78%) Low: 26,970 (71%)
Shash Jáa Unit (acres)	High: 55,159 (84%) Medium: 46,379 (89%) Low: 23,790 (98%)	High: 39,633 (60%) Medium: 30,172 (58%) Low: 17,897 (73%)	High: 54,900 (83%) Medium: 43,804 (84%) Low: 22,547 (93%)	High: 54,900 (83%) Medium: 43,804 (84%) Low: 22,547 (93%)	High: 54,876 (83%) Medium: 43,798 (84%) Low: 22,547 (93%)

Table CUL-6. Known Cultural Localities in Areas Available (BLM)/Suitable (USFS) for Livestock Grazing

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Indian Creek Unit (count)	245	81	245	255	255
Shash Jáa Unit (count)	2,029	1,008	2,013	2,013	2,012

3.5.2.2.5. Impacts from Recreation Management Actions

The designation of the BENM is anticipated to increase recreational visitation, including visitation at cultural resource sites, in the Planning Area. The designation of the SRMAs and RMZs under Alternatives B, C, D, and E and the associated targeted activities and management actions of each alternative would help reduce impacts on cultural resources compared to Alternative A by focusing visitation in areas where cultural sites have been stabilized and prepared for visitation. Focusing future visitation in these areas would reduce inadvertent damage to sites, looting or vandalism, and would provide opportunities to educate visitors regarding appropriate cultural site visitation etiquette.

Impacts to cultural resources from recreation decisions may result from the identification of RMZs, where specific management actions direct activities consistent with the objectives for establishing each RMZ. Where recreation activities are concentrated, the greatest potential direct impact to cultural resources is surface disturbance from excessive visitation and the potential increase in site vandalism and looting. These effects can be reduced by encouraging visitors to visit sites that have been prepared for public visitation. Possible indirect effects from recreation decisions may also include the potential for increased visitation to change the setting or feeling of a significant cultural locality. Increased recreational visitation to cultural sites would also affect Tribes by increasing the potential for impacts to cultural resources and sites that are of cultural and religious significance to Tribes.

Other management actions common to all action alternatives and all recreation management decisions include not allowing roped or climbing access to historic properties except for emergencies or administrative actions. Disturbance and associated impacts to cultural sites would be minimized by limiting roped access to such sites. Additionally, specific criteria for issuance of an SRP/SUA versus a simple letter of agreement for an organized group event considers the potential effect of such an event on cultural resources. A more formal permit would generally be required when the proposed activity may have conflicts with cultural resources.

Cultural resources issues are addressed by management alternatives presented for the McLoyd Canyon-Moon House RMZ and the proposed San Juan Hill RMZ. At the McLoyd Canyon-Moon House RMZ, a management action common to all action alternatives is to require a permit to access Moon House. Permitted access to Moon House would be limited to 20 people per day for private use and 16 additional people allowed on commercial guided trips. Permits would limit the number of people to access the site and would minimize the impacts associated with excessive visitation. Alternative A provides a limit of 36 people per day in total and does not differentiate private use from commercially guided trips in reaching this limit. Should monitoring indicate that impacts are negatively affecting cultural resources in the Moon House RMZ, the BLM could adjust group sizes through subsequent management action. At the proposed San Juan Hill RMZ, a management action common to all action alternatives is the establishment of a specific objective to manage the San Juan Hill RMZ to facilitate cultural and heritage tourism. Under Alternative A, the area proposed for the San Juan Hill RMZ under the other alternatives would continue to be managed as the San Juan River SRMA.

For the proposed Doll House RMZ, Alternative B would require all users to acquire a permit. No such permit requirements would be provided under any other alternative. Limiting access to Doll House to permitted

use would reduce daily visitation to 20 visitors per day with a maximum group size of 12 individuals. It would also provide an opportunity for agency staff to give instructions to permittees regarding appropriate care for cultural resources. Under Alternative A, there are no actions similar to any of the other alternatives. Alternative B, which requires permits to access Doll House, would provide greater protections for cultural resources than any other alternative.

Table CUL-7 provides the acreages of archaeological sensitivity for the McLoyd Canyon-Moon House RMZ and the proposed San Juan Hill and Doll House RMZs, and Table CUL-8 provides the numbers of known archaeological localities in these same RMZs.

Table CUL-7. Archaeological Sensitivity in Select Recreation Management Zones

	High Probability	Medium Probability	Low Probability	Total
McLoyd Canyon-Moon House RMZ (acres)	62 (19%)	140 (44%)	117 (37%)	319
Proposed San Juan Hill RMZ (acres)	1,511 (59%)	946 (37%)	111 (4%)	2,568
Proposed Doll House RMZ (acres)	36 (13%)	124 (45%)	117 (42%)	277

Table CUL-8. Known Cultural Localities in Select Recreation Management Zones

	McLoyd Canyon-Moon House RMZ	San Juan Hill RMZ (proposed)	Doll House RMZ (proposed)
Known cultural localities (count)	5	51	13

3.5.2.2.6. Impacts from Riparian Management Actions

Impacts to cultural resources from riparian management decisions are minimal and relate primarily to access for collection of riparian resources for American Indian traditional purposes. Decisions that limit access to traditionally important riparian resources would directly impact the traditional values that American Indian communities have for collecting those resources.

Management actions common to all action alternatives exclude riparian and/or aquatic areas from private or commercial use of woodland products but provide an exception for American Indian Traditional Use as determined on a site-by-site basis. Management actions common to all action alternatives provide allowances for cottonwood and willow harvest with a permit for American Indian ceremonial uses.

There are no action alternatives that address riparian issues that could affect cultural resources differentially across alternatives.

3.5.2.2.7. Impacts from Soil and Water Management Actions

Impacts to cultural resources from soil and water decisions are minimal and relate to activities designed to control erosion. Erosion is both a surface- and subsurface-disturbing impact agent at archaeological sites, and management actions that minimize erosion are favorable impacts to such localities. Under a range of action alternatives designed to address hiking practices, Alternative D would encourage Leave-No-Trace hiking practices; Alternatives C and E would monitor potentially sensitive locations for impacts from off-trail hiking; and Alternative B would limit hiking to designated trails, where present, in areas with a high likelihood for cultural resources. Overall, limiting hiking to designated trails in areas with high sensitivity for cultural resources, as in Alternative B, would provide the greatest protections for cultural resources. Because there are no similar soil and water management actions under Alternative A, all action alternatives would include more soil and water management actions that decrease the potential for impacts to cultural resources in comparison to Alternative A.

3.5.2.2.8. Impacts from Travel Management Actions

Potential impacts to cultural resources from travel management decisions may be a result of increased access to cultural resources and include, but are not limited to, surface disturbance from excessive visitation and loss of site integrity because of vandalism and looting. Specific characteristics of cultural resources most susceptible to human-caused impacts are varied and include cultural resource site type, visibility, and complexity of cultural remains. Vehicle access to cultural resource sites, however, is consistently cited as a primary factor influencing human-caused impacts. Multiple studies of the relationship between evidence for human-caused impacts to cultural resource sites and the distance of those sites to roads strongly implicate

vehicular access as a significant risk factor to maintaining site integrity (Hedquist et al. 2014; Nickens et al. 1981; Spangler et al. 2006). These studies show that a cultural resource site is more likely to have been subject to looting, vandalism, or other negative human-caused impacts if it is nearer to a road. Accordingly, areas designated as closed to OHV use provide greater protection for cultural resources than do areas designated as OHV limited areas. Moreover, pursuant to 43 CFR 8341.2, under all alternatives the agencies would close areas in which historic properties are being or would be considerably adversely impacted by off-road vehicles. Table CUL-9 provides the total high, medium, and low areas of archaeological sensitivity for areas closed to OHV use and indicates what percentage of each sensitivity are closed to OHV use under each alternative. Numbers of known cultural localities in each Unit that would be closed for OHV use under each action alternative are given in Table CUL-10.

Alternatives A, C, D, and E each close the least number of acres of high archaeological sensitivity and provide limited OHV access to the greatest number of acres of high archaeological sensitivity when compared with Alternative B. In both the Indian Creek and Shash Jáa Units, Alternative B would provide the greatest protection for archaeological resources by closing the greatest number of acres of high archaeological sensitivity to OHV use and by protecting the greatest number of known archaeological sites. However, all action alternatives would implement an activity-level cultural resources management plan, a Cultural Resources Monitoring Framework (Appendix D), Cultural Resources Allocation Criteria and Management Strategies (Appendix E), and an American Indian Tribal Collaboration Framework (Appendix F), all of which would help to better address potential travel management impacts and the proper care and management of cultural resources in comparison to Alternative A.

Table CUL-9. Archaeological Sensitivity in Areas Closed or Limited to OHV Use

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
OHV closed: Archaeological sensitivity in the Indian Creek Unit (acres)	High: 25 (<1%) Medium: 1,340 (3%) Low: 5,544 (15%)	High: 4,006 (50%) Medium: 19,769 (49%) Low: 20,143 (43%)	High: 25 (<1%) Medium: 1,340 (3%) Low: 5,544 (15%)	High: 25 (<1%) Medium: 1,340 (3%) Low: 5,544 (15%)	High: 25 (<1%) Medium: 1,340 (3%) Low: 5,544 (15%)
OHV limited: Archaeological sensitivity in the Indian Creek Unit (acres)	High: 6,356 (79%) Medium: 31,501 (78%) Low: 26,779 (70%)	High: 2,413 (30%) Medium: 13,222 (33%) Low: 12,340 (32%)	High: 6,356 (79%) Medium: 31,501 (78%) Low: 26,779 (70%)	High: 6,356 (79%) Medium: 31,501 (78%) Low: 26,779 (70%)	High: 6,356 (79%) Medium: 31,501 (78%) Low: 26,779 (70%)
OHV closed: Archaeological sensitivity in the Shash Jáa Unit (acres)	High: 3,090 (5%) Medium: 8,146 (16%) Low: 8,473 (35%)	High: 34,566 (53%) Medium: 27,887 (53%) Low: 11,332 (46%)	High: 3,090 (5%) Medium: 8,146 (16%) Low: 8,473 (35%)	High: 3,090 (5%) Medium: 8,146 (16%) Low: 8,473 (35%)	High: 3,090 (5%) Medium: 8,146 (16%) Low: 8,473 (35%)
OHV limited: Archaeological sensitivity in the Shash Jáa Unit (acres)	High: 55,237 (84%) Medium: 39,827 (76%) Low: 15,389 (63%)	High: 23,760 (36%) Medium: 20,080 (38%) Low: 12,530 (51%)	High: 55,237 (84%) Medium: 39,827 (76%) Low: 15,389 (63%)	High: 55,237 (84%) Medium: 39,827 (76%) Low: 15,389 (63%)	High: 55,237 (84%) Medium: 39,827 (76%) Low: 15,389 (63%)

Table CUL-10. Known Cultural Localities in Areas Closed or Limited to OHV Use

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
OHV closed: Indian Creek Unit (count)	1	89	1	1	1
OHV limited: Indian Creek Unit (count)	264	179	264	264	264
OHV closed: Shash Jáa Unit (count)	101	1,289	101	101	101
OHV limited: Shash Jáa Unit (count)	1,998	852	1,998	1,998	1,998

3.5.2.2.9. Impacts from Vegetation Management Actions

Impacts to cultural resources from vegetation decisions may be related to access for Traditional Use of culturally important plants. Impacts to cultural resources are also related to vehicles traveling off roads while collecting vegetation resources. Management actions that limit access adversely impact Traditional Use, and management actions that provide access yield beneficial impacts. In management common to all alternatives, the agencies would provide protection and access to resources important for American Indian ceremonial or Traditional Use. Additionally, Alternative A provides that the Monument would be open for both private and commercial seed gathering and plant collection. Alternative B provides for private seed

gathering and plant collection for American Indian Traditional Uses. Alternatives C, D, and E are the same as Alternative B. Ensuring access to culturally important seed and plant resources, as provided in Alternatives B, C, D, and E would yield beneficial impacts to cultural resources.

3.5.2.2.10. Impacts from Forestry and Woodlands Management Actions

Impacts to cultural resources from forestry and woodlands decisions may relate principally to access for Traditional Use of culturally important woodland resources but also concern woodland harvest at cultural sites. As noted for riparian resources in Section 3.5.2.2.6, management common to all alternatives for forestry and woodlands would also provide access for cottonwood and willow harvest for American Indian Traditional Use. Among the action alternatives addressing woodland harvest, Alternatives C and D would prohibit private harvest at the Doll House and Moon House sites, Alternative C would also implement a monitoring program that would evaluate the effect of woodland harvest on several characteristics and resources, including cultural resources. Alternative D is the same as Alternative B with respect to cultural resources. Alternatives that would close access for woodland harvest, including firewood collecting, at the Doll House and Moon House archaeological sites would provide greater protections for these localities. Compared to Alternative A, Alternative E would 1) only allow private harvest, and 2) prior to authorizing private woodland product harvest, the agencies would ensure that the activity is consistent with the proper care and management of Monument objects and values, including cultural resources.

Tables CUL-7 and CUL-8 above provide the acres of archaeological sensitivity and numbers of known archaeological localities for the McLoyd Canyon-Moon House RMZ and the proposed Doll House RMZ, where access for woodland harvest would be closed.

3.6. Fire Management

The Federal Wildland Fire Management Policy (BLM Instructional Memorandum 2009-112) directs Federal agencies to achieve a balance between fire suppression to protect life, property, and resources and the use of wildland fire and other means to regulate fuels and maintain healthy ecosystems.

The BLM and USFS use fire regimes and Vegetation Condition Class (VCC) as indicators of current vegetation condition and fuel loading (Sections 3.6.1 and 3.6.2). Although wildfire spreads beyond administrative boundaries, the BLM's and USFS's fire management and fuels treatment actions are limited to the lands they administer. For this reason, the analysis area for fire management is the Planning Area.

3.6.1. Affected Environment

Fire is an inherent component of ecosystems and historically played an important role in promoting plant succession and the development of plant communities in the Indian Creek and Shash Jáa Units. During the last century, land use practices have changed plant communities by altering the frequency, size, and severity of wildfires (AMS Section 2.3.2.1). AMS Section 2.3.2.2 provides detailed information regarding fire resource conditions, indicators, trends, and forecasts. Current and desired resource conditions related to fire management are classified into five fire regimes (fire severity and frequency) and three VCCs. More than half of both units represents low-severity to mixed-severity fire resource conditions, and less than a third represents high-severity, stand-replacement fires, with the latter being more difficult to suppress. Classes VCC I through VCC III describe the amount of vegetation departure of an area or landscape from historic to present conditions, with VCC I being low departure and VCC III being high departure. This extent of departure from the natural state is used to prioritize areas for treatment. Maps FIRE-1 and FIRE-2 display the current vegetation departure from historic to present conditions in the BENM. Over the last century, the combination of wildfire suppression, human activities, and changing land use patterns has altered the natural cycle and role of fire and vegetative communities. Suppression actions and some grazing practices have resulted in large fuel loads that vary significantly from historic conditions. Pinyon and other conifers and woody shrubs are encroaching into what was historically sagebrush shrub. Over time, the encroachment increases fuels loading, causing an upward shift in fire behavior (AMS Section 2.3.2.6.2).

Based on prolonged drought conditions and the establishment of invasive species, it is anticipated that the potential for uncharacteristic wildfire effects would continue in lower-elevation sagebrush vegetation communities. Live and dead fuel loadings in forest stands and conifer/juniper encroachment into aspen and higher-elevation sagebrush vegetation communities also would continue, increasing the risk for

wildfires. The widespread presence of invasive, nonnative species continues to be an obstacle to historic post-fire recovery processes (AMS Section 2.3.2.6.3).

To maintain ecosystem health and make progress toward meeting desired vegetation condition and fuel loading, the BLM's and USFS's management practices include wildfire suppression, as well as vegetation treatments using wildfire, prescribed burns, mechanical, and chemical methods. The BLM and USFS have increased the number of prescribed fire and other treatment projects to address vegetative issues, improve wildlife habitat, improve watershed conditions and rangeland resources, and reduce fire hazard (AMS Section 2.3.2.5). Approximately 7,575 acres has previously undergone mechanical treatments in the Planning Area. Time frames and outcomes for treatments of tamarisk, juniper, cheatgrass, and Russian olive removal and restoration are highly variable, depending on the invasive species, type of treatment, soils, precipitation, ecosystem, and other conditions (Kettenring and Adams 2011). After monitoring a juniper removal project, one study concluded that, after 3 years, perennial and forb cover increased with further measurable recovery after 6 years (SageSTEP News 2017). For another project involving tamarisk and Russian olive removal, removal was successful but new seedlings and sprouts had to be retreated again after 4 years (Bureau of Reclamation 2008). After four to six seasons of tamarisk removal for a different study, monitoring indicated that there was an increase in species richness in certain sites (Hisham 2013).

3.6.2. Environmental Consequences

3.6.2.1. ANALYSIS METHODS

Fire suppression priorities—such as protection of human life and public safety and restrictions for suppression, as well as prescribed fire and fuel treatment priorities—influence the types of impacts. Fire regime and VCC ratings are indicators for wildland fire frequency and severity and departure from acceptable ecosystem conditions. The VCC rating, along with other related resource restoration and improvement priorities (e.g., wildlife and riparian areas), helps determine priority areas for treatment (AMS Section 2.3.2.2). The analysis also takes into consideration the amount of fuel treatments that would take place over the life of the plan and the impact on fire management from other resource uses.

The following assumptions apply to the analysis.

- The BLM would treat approximately 3,000 acres of vegetation in the Shash Jáa Unit and approximately 2,000 acres in the Indian Creek Unit over the life of the plan.
- The number of visitors and recreational use would continue to increase, thus increasing the potential risk of human-caused fire ignitions from campfires and vehicle exhausts/engines.

3.6.2.2. DIRECT AND INDIRECT IMPACTS

3.6.2.2.1. Impacts from Fire Management Actions

The proposed fire decisions common to all alternatives address priorities for suppression, wildland fire, prescribed fire, and other fuel treatments. Wildland fire suppression priorities would have the added benefit of protecting developed areas, cultural resources, sensitive habitat, developed recreation sites, scenic areas, special designations, and special status species. During the life of the plan, wildland fire suppression also reduces soil erosion and protects vegetation. In sensitive areas with wilderness characteristics and WSAs, fire suppression would minimize impacts using Minimum Impact Suppression techniques (BLM Manual 6330). Post wildland fire ESR would also provide beneficial effects by preventing or reducing further soil erosion and restoring habitat and vegetation after wildland fire.

Where appropriate, wildland fire, prescribed fire, and other fuel treatment projects (e.g., mechanical) would have the beneficial effect of moving VCC III areas towards VCC I or VCC III, proactively reducing fuel loading around developed areas and sensitive resources and meeting other resource objectives. The potential adverse impacts from mechanical, chemical, or other fuel-treatment activities on sensitive cultural and paleontological sites would be reduced through site surveys, project plans, and related mitigation and BMPs. Loss of healthy vegetation and subsequent increases in erosion risk would be minimized by ESR. Additionally, this loss would be short term, with vegetation typically returning within 3 to 6 years (see Section 3.6.1).

The fire alternatives have varying levels of management that would reduce the impacts of certain fuel treatments. Alternative D would limit chaining to previously chained areas; Alternatives C and E would avoid chaining and other mechanical treatments in sensitive areas; and Alternative B would prohibit chaining, therefore reducing impacts—especially in sensitive areas—by reducing surface and shallow subsurface disturbance. Alternatives C and E would have the beneficial effect of implementing fuel treatment projects based on monitoring and site evaluations and establishing priorities through annual funding. However, despite this flexibility, there may be some time delays between garnering monitoring results data and implementing the projects. Alternative B would reduce impacts by limiting fuel treatments to hand application in sensitive areas (e.g., cultural and nesting sites and areas with wilderness characteristics), although this may limit the effective implementation of large-scale projects. Because there are no similar fire management actions under Alternative A, all the action alternatives would reduce impacts related to fire management in comparison to Alternative A. All action alternatives would include more fire management actions addressing the proper care and management of Monument objects and values than Alternative A (see Section 2.4.2.2).

3.6.2.2.2. Impacts from Grazing Management Actions

Grazing-related impacts from improper grazing practices could include alteration to the vegetative community, including decreased species composition and the potential for increased fuel loading (AMS Section 2.3.2.6.2). These potential adverse effects would be mitigated by managing grazing to meet or make progress toward Utah Rangeland Health Standards (BLM 1997) or USFS desired conditions for rangelands. Alternatives B, D, and E could make additional areas unavailable (BLM)/not suitable (USFS) to grazing (refer to Table LSG-2), which could have the beneficial effect of helping restore or maintain vegetation communities at desired conditions.

3.6.2.2.3. Impacts from Lands and Realty Management Actions

Alternatives A through E would provide lands and realty designations that are Open, Avoidance, and Exclusion areas for ROWs. Alternative A would have the most designated Open areas for ROWs (refer to Section 3.7.2.2.1); therefore, that alternative would have the greatest potential for impacts on fire management, including wildland fire-suppression and fuel-treatment projects. There would also be more potential for human-caused fire ignitions due to the possibility of more authorized projects and associated operations. Authorized projects would also cause surface disturbance and impact vegetative communities to shift them away from desired VCC classes. The potential impacts on vegetation communities for any authorization could be reduced by BMPs or proposed mitigation depending on site-specific surveys and project design.

Conversely, Alternatives B, C, D, and E would have more designated ROW Avoidance and Exclusion areas than Alternative A, with Alternative B having the most, followed by Alternative C and then Alternatives D and E. Alternatives C, D, and E would reduce the impacts previously described in comparison with Alternative A, and Alternative B would negate these impacts. Limiting or excluding land use authorizations, would have the beneficial impact of helping maintain or make progress toward VCC I and II.

3.6.2.2.4. Impacts from Recreation, Special Designations, and Travel Management Actions

Alternatives B through E progressively increase access and use by incorporating the proposed recreation decisions as described under the Recreation alternatives. Limits on access and use include prohibitions on target shooting, prohibiting or limiting commercial or group sizes through permitting, and prohibiting dispersed camping. In general, increasing restrictions on use and access for recreation, special designations, and off-road travel has the beneficial impact of maintaining healthy vegetation communities in VCC I or VCC II by reducing surface disturbance and erosion. This also would also potentially reduce the number of fuel treatment projects needed over the life of the MMPs. Alternatives D and E have the fewest restrictions of the action alternatives. Proposed decisions for Alternative C are adaptable based on monitoring, and would adjust access and visitor group size, which would have the beneficial effect of allowing close coordination with fire management activities and priorities and reducing recreational user conflicts. Alternative B has the most restrictions on access, visitor group size, and allowable use. This represents the greatest potential benefit in terms of VCC and presents the lowest human-caused fire ignition risk in comparison to Alternatives C, D, and E. However, it should be noted that fire ignition risk

from recreational users represents a relatively low number (<10%) of the unplanned ignitions in the Planning Area (AMS Section 2.3.2.4.1). For a relative alternatives comparison of these restrictions, see Section 2.4.7.

For travel management, all alternatives would designate the Planning Area as either OHV limited or OHV closed areas. There would be no OHV open areas under any of the alternatives. The amount of the Planning Area completely closed to OHV use varies among the alternatives. Alternatives A, C, D, and E have similar areas closed to OHV use, and Alternative B has the most. Therefore, Alternative B poses the least risk of fire ignition. Alternatives A, C, D, and E would have a similar risk.

3.6.2.2.5. Impacts from Vegetative Management Actions

Under all alternatives, the agencies would manage vegetation and plant communities to optimize plant health and resilience to landscape-wide impacts. Under all alternatives, it is estimated that the agencies would treat approximately 3,000 acres of vegetation in the Shash Jáa Unit and approximately 2,000 acres in the Indian Creek Unit over the life of the plan. Depending on priorities, most of the treatments are expected to involve removal of invasive Russian olive, cheatgrass, tamarisk, and encroaching pinyon-juniper, which would have the beneficial effect of moving VCC III areas toward VCC II or VCC I.

3.6.2.2.6. Wildland Fire Suppression Costs

As indicated in Section 3.6.2.2.5, under all alternatives the agencies would manage vegetation and plant communities to optimize plant health and resilience to landscape-wide impacts. This would involve fuel treatments across the Planning Area, which would help move VCC III areas to VCC II or I, reducing the severity of departure from the natural state and natural fire regime. In addition, fire management goals common to all alternatives include making progress in moving areas in VCC III to VCC II or I, and using fire management as necessary to maintain vegetative types in PFC. In addition, management actions common to all action alternatives for fuels treatments focus on restoring VCC regimes when feasible so future wildfires can be more easily managed. Under all alternatives, priorities for fire management decisions and actions consider the same set of criteria. Based on these common goals and management actions that protect the same values for all alternatives, wildland fire suppression costs are expected to be similar for all alternatives.

Alternatives B, D, and E prescribe restrictions on fuels management decisions (with Alternative B prescribing more restrictions), and Alternative C confines fuels management to areas where it is necessary to protect human life and property, sensitive cultural resources, and ecosystem function. Alternative B has the most restrictions on fuels management decisions and does not allow chaining, which could limit fuels treatment decisions in specific areas more than other alternatives. However, the overall focus of all alternatives on restoring VCC regimes is expected to be more applicable to wildland fire suppression costs than the individual areas that are restricted from fuels management under different alternatives.

3.7. Lands and Realty

The BLM and the USFS are responsible for planning and managing public lands in the Planning Area.

The goals of the BLM Lands and Realty Program are as follows:

- Provide for uses of public lands in accordance with FLPMA, the Mineral Leasing Act, BLM Manual 6220, and applicable BLM regulations
- Manage the public lands in support of goals and objectives of other resource programs
- Improve management of the public lands through land tenure adjustments

The NFMA (16 USC 1601) directs land and resource management planning on National Forest System lands. The primary goal of the USFS's Lands and Realty Program is to conserve and manage the public's real property on National Forest System lands.

The BLM and USFS Lands and Realty Programs consist of two primary elements: land tenure and land use authorizations. The BLM Lands and Realty Program also administers land withdrawals. The Planning Area is currently withdrawn from mineral entry, and thusly there are no proposed withdrawals in the Planning Area.

The analysis area for lands and realty is the Planning Area. Current lands and realty conditions in the Planning Area are described below and in Section 2.5 of the AMS.

3.7.1. Affected Environment

3.7.1.1. LAND TENURE

Land tenure adjustment refers to those management actions that result in the BLM or USFS exchanging, disposing of, or acquiring non-Federal lands or interests in land. FLPMA requires that public land be retained in public ownership unless, as a result of land use planning, disposal of certain parcels is warranted and in the public interest. Administrative jurisdictions for land use in the Planning Area include BLM, USFS, State, and private lands (see AMS Tables 1-1 and 1-2). The BLM-administered lands account for 73% (169,256 acres) of the Planning Area. As outlined in BLM Manual 6220, the BLM would strive to retain administration of public land within monuments unless otherwise provided for in law.

3.7.1.2. LAND USE AUTHORIZATIONS AND UTILITY CORRIDORS

The BLM and USFS issue land use authorizations for the use, occupancy, and development of BLM- and USFS-administered lands. Types of BLM and USFS land use authorizations are as follows:

- ROWs and SUAs: BLM ROWs are issued under the regulations at 43 CFR 2800 and 2880 for the use of BLM-administered land by private, commercial, and government entities. Facilities requiring ROW grants from the BLM include those for power lines, pipelines, and roads. The USFS authorizes these uses through the issuance of an SUA.
- Communication site leases: Leases are typically obtained by public and private tenants, such as telephone companies; local utilities; and local, State, and Federal agencies, for siting communication towers and supporting equipment and access routes to the facilities.
- FLPMA permits, leases, and easements: Section 302 of the FLPMA allows for the issuance of easements, leases, and permits for any use that is not specifically authorized under other laws or regulations and not specifically forbidden by law. Examples of these types of permits are those for commercial filming, operation of drones/UAVSs, apiaries, and temporary storage yards. The USFS issues SUAs for similar activities pursuant to 36 CFR 251.

There are 22 permitted land use authorizations in the Planning Area (see AMS Tables 2-26 and 2-27). These authorizations are considered valid existing rights. The BLM allows for the continued operation and maintenance of these authorizations, subject to the terms and conditions of the agreements. There are also casual uses, such as the operation of drones/UAVSs, taking place in the Planning Area. Under the existing plans, these uses do not require a land use authorization.

The BLM designates utility corridors as a planning-level tool to guide future land use authorizations. Corridors identify preferred areas for placing or co-locating multiple linear ROWs, such as gas pipelines and power lines. There is an existing utility corridor in Shash Jáa Unit.

In 2017, the BLM issued 16 permits for commercial filming. The BLM anticipates that filming activity and the associated demand for this type of land use authorization will increase. The USFS has not issued any commercial permits for USFS-administered lands in the Planning Area.

3.7.2. Environmental Consequences

3.7.2.1. ANALYSIS METHODS

This section discusses the potential effects of the proposed decisions and management actions on lands and realty in the Planning Area. Indicators of impacts on lands and realty are as follows:

- Increase or decrease in the number of acres managed as avoidance or exclusion areas land use authorizations
- Increase or decrease in acres of designated utility corridors

Assumptions for the analysis of impacts on the lands and realty program are as follows:

- There is a low demand for most forms of ROWs in the BENM compared to other lands in the MFO. The demand for new land use authorizations would remain steady or slightly increase throughout the life of the MMPs.
- Designating utility corridors encourages, but does not require, the co-location of new ROW infrastructure, specifically power lines and gas pipelines.
- Land tenure adjustments improve land management efficiency by conveying difficult to manage lands out of Federal ownership and acquiring lands that improve resources and resource use values.

3.7.2.2. DIRECT AND INDIRECT IMPACTS

3.7.2.2.1. Impacts Common to All Alternatives

Land tenure adjustments allow for the acquisition of lands to protect sensitive resources, maintain public values, and improve overall resource management. Under all alternatives, the BLM and USFS would evaluate land acquisitions for consistency with the management of the Monument's objects and values. The nature and extent of the impact from land acquisitions would be determined by the extent to which the management affects the BLM's and USFS's ability to acquire parcels, maintain access to other BLM- and USFS-administered lands, and carry out their respective land use planning objectives. Similarly, under all alternatives the BLM and USFS would retain all lands in the Planning Area in Federal ownership. Retaining lands in Federal ownership or acquiring new lands would maintain or improve overall public and resource values of those lands.

Under all alternatives, the BLM and USFS would issue permits for filming activities, provided that the proposed activity meets the minimum criteria for avoiding impacts on other resources. Demand for these types of permits would result in an ongoing administrative requirement on the BLM and USFS Lands and Realty Programs to review and process the permits.

Under all alternatives, the BLM and the USFS would, as appropriate, include Tribal consultation in lands management actions, ROWs decisions, decisions relating to the Recreation and Public Purposes Act, and land acquisition.

3.7.2.2.2. Alternatives Comparison Analysis

Land Use Authorizations and Utility Corridors

In areas designated as open to ROWs and SUAs, new land use authorizations would be allowed, subject to standard terms and conditions of any applicable local, State, and Federal permits. Managing 202,700 acres (75%) of the Planning Area as open under Alternative A would allow the BLM and USFS to accommodate demand for new land use authorizations in those areas. Under this alternative, there would be standard administrative requirements for the agencies' lands and realty programs to process land use authorization applications.

Prescribing land use authorization exclusion and avoidance areas to protect resources or to reduce conflicts with other uses directly affects the agencies' lands and realty programs. Neither agency can authorize land uses in exclusion areas. Although the BLM and USFS would accept land use authorization applications in avoidance areas, an authorization request in these areas may be subject to additional requirements, such as resource surveys and reports, construction and reclamation engineering, long-term monitoring, special design features, special siting requirements, timing limitations, and relocation. Such requirements could restrict project location. There would continue to be 37,200 acres of ROW avoidance and 12,600 acres of ROW exclusion areas under Alternative A.

Managing more acres as avoidance and exclusion areas for land use authorizations under Alternatives B, C, D, and E would decrease opportunities for new authorizations in the Planning Area compared with Alternative A. All action alternatives would include more land and realty management actions addressing the proper care and management of Monument objects and values than Alternative A (see Section 2.4.3.2), which would reduce impacts from lands and realty authorizations under all action alternatives compared to Alternative A. These restrictions on land use authorizations also directly impact the agencies' lands and realty programs by increasing the application processing time and costs, for example, to

evaluate greater design, mitigation, or siting criteria. These impacts would be greatest under Alternative B, which would result in 100% (201,800 acres) of the Planning Area being managed as exclusion areas. Neither the BLM nor the USFS could accommodate demand for future land use authorizations in the Planning Area under Alternative B.

Under Alternatives D and E, most opportunities for new land use authorizations would be in open areas (64,300 acres) in the Indian Creek Unit. In the Shash Jáa unit, the only opportunities for new authorizations outside exclusion and avoidance areas under Alternatives D and E would be in the existing utility corridor and along State highways (1,500 acres). Under Alternatives D and E, avoidance criteria would apply to 61% of the Planning Area, which could limit or prevent new land use authorizations. Managing 156,200 acres (77%) of the Planning Area under Alternative C as exclusion areas would limit opportunities for new authorizations to the remaining 45,500 acres (13%) managed as avoidance areas. However, avoidance criteria would limit, or in some cases preclude, new authorizations.

Consistent with FLPMA and the NFMA, and where not precluded by other law or policy, the BLM and USFS would evaluate applications for non-recreational SUAs and other types of permits, leases, and easements, such as for drones/UAVSs. Alternative A would provide the greatest opportunity for the use of UAVSs in the Planning Area. Alternatives C, D, and E would result in more areas of the Planning Area being restricted to the casual use of drones/UAVSs, whereas Alternative B would eliminate opportunities for non-permitted drone/UAVS use. Permitted and administrative drone/UAVS use could occur in the Planning Area under Alternatives B, C, D, and E, but the use would be subject to analysis on a case-by-case basis.

Under all alternatives, the BLM and the USFS would allow commercial filming in all areas. However, to avoid resource impacts, minimum impact filming criteria would be required as part of the land use authorization. These minimum impact criteria include limits on the number of livestock, limits on the number of production vehicles, and limits on the number of people involved in the production. These criteria would restrict the types, locations, and timing of filming activities allowed in the Planning Area.

3.8. Lands with Wilderness Characteristics

The analysis area for lands with wilderness characteristics is the wilderness inventory units within the Planning Area that were found to possess wilderness characteristics. The analysis area includes the Bridger Jack, Comb Ridge, Fish and Owl Canyons, Harts Point, Road Canyon, San Juan River, and Shay Mountain lands with wilderness characteristics units (see Maps LWC-1 and LWC-2).

The BLM's authority to recommend lands for Congressional wilderness designation expired in 1991 under FLPMA Section 603 (43 USC 1782). However, Congress gave the BLM broad authority and discretion under FLPMA, aside from Section 603, to identify lands with wilderness characteristics and, if appropriate, to manage lands to protect such characteristics. The lands with wilderness characteristics inventory authority comes from FLPMA, Title II, Section 201 (43 USC 1711(a)), which states that the BLM is to "prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values." The BLM makes decisions regarding the management of resources present on BLM-administered public lands, including lands with wilderness characteristics, through the land use planning process.

One of the key characteristics of lands meeting the qualities of wilderness is the requirement under the Wilderness Act that the parcels of land contain at least 5,000 contiguous roadless acres or be of sufficient size to allow for their preservation and use in an unimpaired condition. BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM-Administered Lands, requires the areas being evaluated to be at least 5,000 acres in size, contiguous to other protected lands with wilderness characteristics, of sufficient size to be able to preserve and use in an unimpaired condition, or a roadless island. They are analyzed in the land use planning process under BLM Manual 6320, Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process. All BLM inventories and decisions related to wilderness characteristics apply only to BLM-administered surface lands in the Planning Area.

The other two major criteria in evaluating wilderness characteristics are the naturalness of an area and opportunities for solitude or a primitive and unconfined type of recreation. While the Wilderness Act of 1964 discusses and mandates these key characteristics of wilderness, the act does not clarify these terms. The BLM has subsequently defined these terms in BLM Manual 6310 and has described how to assess

these conditions on parcels. The following are the terms clarified by BLM policy that are used to describe these key wilderness characteristics.

Naturalness: Lands and resources exhibit a high degree of naturalness when affected primarily by the forces of nature and where the imprint of human activity is substantially unnoticeable. The BLM has the authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken together, are an indication of an area's naturalness. These attributes may include the presence or absence of roads and trails, fences, and other improvements; the nature and extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats.

Opportunities for solitude or primitive recreation: Visitors may have outstanding opportunities for solitude or primitive and unconfined types of recreation when the sights, sounds, and evidence of other people are rare or infrequent; where visitors can be isolated, alone, or secluded from others; where the use of the area is through non-motorized, non-mechanized means; and where no or minimal developed recreation facilities are encountered.

Supplemental values: Another component of lands with wilderness characteristics is that those lands may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value; these are known as supplemental values. Although supplemental values are not required in the BLM's policy on wilderness characteristics, these values are of particular importance and reflect the character of the area.

Components of wilderness characteristics to be analyzed in both the Shash Jáa Unit and the Indian Creek Unit include an area with a minimum of 5,000 acres in size (with some exceptions as described in BLM Manual 6310) so as to make practicable the management of wilderness characteristics, the appearance of naturalness, and outstanding opportunities for solitude or a primitive and unconfined type of recreation.

3.8.1. Affected Environment

Section 2.6 of the AMS details the current management situation, indicators, and key features of lands with wilderness characteristics in the Planning Area. A summary of inventoried units with wilderness characteristics that have been identified in the Planning Area are summarized in Table LWC-1 and presented in Maps LWC-1 and LWC-2.

Table LWC-1. Inventoried Units Found to Possess Wilderness Characteristics

Unit	Acres	Agency
Shash Jáa Unit	49,320	BLM
Shash Jáa Unit	12,773	USFS
Indian Creek Unit	39,404	BLM

The 2008 Monticello RMP does not manage any BLM-administered lands for the protection of wilderness characteristics in the Planning Area.

Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, describes numerous objects, values, and opportunities within the Planning Area. Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, identifies a recreational opportunity theme containing the following values, which are consistent with recreational uses in lands with wilderness characteristics: managing lands for world-class outdoor recreation opportunities and to support a growing travel and tourism sector, opportunities for cultural and heritage tourism, opportunities for experiencing dark skies and natural quiet, and opportunities for education and interpretation. Public interest in these areas has increased in the past 15 years and is expected to increase in the future.

3.8.2. Environmental Consequences

3.8.2.1. ANALYSIS METHODS

Wilderness characteristics are primarily influenced by management actions that affect the undeveloped nature of the area or activities that increase the sights and sounds of other visitors. In general, wilderness characteristic conditions tend to be more qualitative. They are measured by the overall visual quality and naturalness of an area that may be affected by changes to levels of recreation, development, and

surrounding land use. Indicators that can be quantitatively measured are changes to the frequency and number of routes, including the number of unauthorized trails, and the number of encounters with other users.

Indicators of impacts for lands with wilderness characteristics are acres of land that would retain wilderness characteristics based on proposed management.

The analysis includes the following assumptions:

- Use and development of BLM- and USFS-administered lands would increase in the foreseeable future.
- Management and activities outside of lands with wilderness characteristics would not affect those characteristics, so long as they are neither pervasive nor omnipresent.
- Management and allocations proposed for ACECs, areas managed as VRM Classes I and II, and travel management could also preserve wilderness characteristics.

3.8.2.2. DIRECT AND INDIRECT IMPACTS

The amount of lands with wilderness characteristics that overlap key allocations that could either enhance or diminish lands being managed to protect wilderness characteristics, regardless of whether they would be managed for their protection, are displayed in Table LWC-2. A qualitative analysis of the overlapping allocations is discussed by alternative below.

Table LWC-2. Impacts on Lands with Wilderness Characteristics

Management Action	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Total area managed to protect wilderness characteristics (acres)	0	82,293	43,128	0	0
ACECs within lands managed to protect wilderness characteristics (acres)	0	974	0	0	0
Lands with wilderness characteristics closed to OHV use (acres)	2,457	82,293	2,457	2,457	2,457
Lands with wilderness characteristics with OHV use limited to designated routes (acres)	78,744	0	78,791	78,791	78,791
Lands with wilderness characteristics managed as ROW exclusion areas (acres)	1,228	82,293	65,830	663	663
Lands with wilderness characteristics managed as VRM Class I (acres)	1,857	82,293	43,392	240	240
Lands with wilderness characteristics managed as VRM Class II (acres)	45,603	0	38,032	81,121	81,121

Note: Acres refer to impacts on lands in the BLM's current inventory of lands with wilderness characteristics.

Management actions that could impact an area's natural appearance could include the presence or absence of roads and trails, use of OHV vehicles on those roads and trails, fences and other structural range improvements, nature and extent of landscape modifications, or other management actions that result in surface-disturbing activities. All of these activities affect the presence or absence of human activity and, therefore, could affect an area's natural appearance. Prohibiting surface-disturbing activities and new developments in lands with wilderness characteristics would protect naturalness.

Two other wilderness characteristics—outstanding opportunities for solitude or primitive and unconfined types of recreation—are related to the human experience in an area.

Visitors can have outstanding opportunities for solitude or primitive and unconfined recreation under the following conditions:

- When the sights, sounds, and evidence of other people are rare or infrequent
- Where visitors can be isolated, alone, or secluded from others
- Where the use of the area is through nonmotorized or nonmechanized means
- Where there are no or only minimally developed recreation facilities

The BLM would not manage any lands to protect their wilderness characteristics as a priority over other multiple uses under Alternatives A, D, or E. Managing lands with wilderness characteristics for multiple

uses could make these lands available for surface-disturbing activities, which could diminish wilderness characteristics over time. Management actions to protect objects or other resources, such as ACECs, would offer some protection of wilderness characteristics. Wilderness characteristics would likely persist in many of these areas under Alternatives A, D, and E, although wilderness characteristics—in at least some areas that currently possess wilderness characteristics—could degrade under these alternatives due to OHV travel being allowed. Allowing OHV travel on designated routes would impact wilderness characteristics; however, no new routes would be designated except as needed for the care and protection of the objects and values and for public health and safety. Increased sights and sounds of other people would reduce opportunities for solitude. OHV use and access would also reduce opportunities for primitive recreation. The existence of OHV and mechanized trails could reduce the natural appearance in the vicinity of the trails. Impacts would be localized and might not be experienced in the Unit as a whole. Allowing dispersed camping in areas outside designated dispersed camping areas (until analyzed in an implementation-level Recreation Area Management Plan/Business Plan) could also degrade wilderness characteristics because of resulting impacts on vegetation and soils. Managing for the protection of wilderness characteristics as a priority over other multiple uses under Alternative B for all seven of the areas found to possess wilderness characteristics would include various restrictions on resource uses in the Planning Area. Overall, these protections would reduce impacts to lands with wilderness characteristics more than any other alternative. Impacts under Alternative B would be similar to those described under Alternative C but to a greater degree, because more areas and acreage would be managed for the protection of wilderness characteristics.

Under Alternative B, lands being managed for the protection of wilderness characteristics would be designated as closed to OHV use, and vegetation treatments would be by non-mechanized and non-motorized methods only, which would protect wilderness characteristics by restricting activities that could impact natural appearance and opportunities for solitude or primitive and unconfined recreation.

Lands being managed for the protection of wilderness characteristics under Alternative B would be managed as VRM Class I, which would allow only minimal visual change to the landscape and would offer more protection from effects on apparent naturalness than any other alternative.

Alternative C would manage three units for the protection of wilderness characteristics while applying slightly more flexible management actions to allow for compatible multiple uses while reducing impacts to wilderness characteristics. Rather than managing as OHV closed area or as VRM I as under Alternative B, Alternative C would manage the three units as OHV limited and VRM Class II. Overall, these protections would reduce impacts to lands with wilderness characteristics compared with Alternatives A, D, or E.

All areas proposed to be managed to protect wilderness characteristics under Alternatives B and C would be managed as ROW exclusion areas. This would prohibit surface-disturbance impacts that occur during construction such as vegetation clearing, building of access roads, an increase of human presence, noise, weed potential, visual intrusions, and habitat fragmentation.

The areas proposed to be managed to protect wilderness characteristics under Alternatives B and C would be closed to the construction of new roads. Prohibiting road construction in these areas would protect wilderness characteristics by restricting activities that could impact natural appearance and opportunities for solitude or primitive and unconfined recreation.

OHV uses in areas proposed to be managed for the protection of wilderness characteristics under Alternatives B and C would be limited to designated routes. However, there would be a 100-foot setback from these designated route centerlines that would not be managed to protect wilderness characteristics. Allowing OHV travel on designated routes would impact wilderness characteristics. Increased sights and sounds of other people would reduce opportunities for solitude. OHV use and access would also reduce opportunities for primitive recreation. The existence of OHV and mechanized trails could reduce the natural appearance in the vicinity of the trails. Impacts would be localized and might not be experienced in the Unit as a whole.

Managing units of lands with wilderness characteristics as VRM Class II would contribute to the protection of the wilderness characteristics. Under VRM Class II objectives, the level of change to the landscape should be low; management activities may be seen but should not attract the attention of the casual observer. Alternatives D and E would manage more lands as VRM Class II than Alternatives A, B, and C.

Wilderness characteristics of naturalness could be maintained or enhanced in the long term from vegetation treatments. Properly designed treatments improve ecosystem composition, structure, and diversity, which would improve the overall apparent naturalness of the area. In the short term, however, wilderness characteristics of naturalness and solitude would be impacted by the noticeable unnatural manipulation of the environment and an increase in human presence and vehicular traffic.

Managing lands to provide dispersed recreation could directly degrade wilderness characteristics through human disturbance, noise, weed introduction and spread, and impacts on vegetation. Depending on the type of activities allowed in the area, impacts would vary with the duration and intensity of any recreation, and they could be short term or long term. The BLM would emphasize other multiple uses as a priority over protecting wilderness characteristics under Alternatives A, D, and E. Managing lands with wilderness characteristics for multiple uses could leave these lands vulnerable to surface-disturbing activities, which could diminish wilderness characteristics over time. However, because some of the area would be managed as ROW exclusion or avoidance for other resources, impacts from surface-disturbing ROW authorizations on apparent naturalness, and any outstanding opportunities for solitude or primitive and unconfined recreation from surface-disturbing activities and human presence, would be reduced.

3.9. Livestock Grazing

Livestock grazing allotments are present within the Planning Area on lands administered by the BLM and USFS. Grazing provides an important economic opportunity within local communities; within the Planning Area it includes the grazing of domestic cattle and horses. The amount of forage required to sustain one animal unit (cow with calf pair or equivalent) for a period of 1 month is called an AUM (animal unit month), as defined at 43 CFR 4100.0-5 (BLM) and USFS Handbook 2209.15 (USFS). The *stocking rate* is the number of animals on a unit of land for a specified time period and is usually expressed in AUMs per unit area. Grazing on Federal (and some non-Federal) lands is governed under the Taylor Grazing Act of 1934. Management practices for livestock grazing in the Planning Area are described in detail in Section 3.7 of the AMS.

The analysis area for livestock grazing consists of the 16 allotments (13 BLM and three USFS) that are present within the Planning Area, encompassing 1,728,353 acres that comprises BLM-administered (1,190,328 acres), NPS-administered (228,573 acres), USFS-administered (170,497 acres), SITLA (114,625 acres), private (23,416 acres), and Ute Mountain Ute Tribal (915 acres) lands (see Map LSG-1). The boundaries of the Planning Area do not align with allotment boundaries, and management changes within the Planning Area could have secondary effects on livestock grazing or stocking rates for the entire allotment; therefore, the analysis area for livestock grazing extends beyond the boundaries of the Planning Area to include the full allotments.

3.9.1. Affected Environment

The existing condition of livestock grazing in the Planning Area is described in the AMS (Section 2.7). Table LSG-1 describes acreages, AUMs, and rangeland trends by allotment within the analysis area. Of the 13 BLM allotments within the Planning Area, eight meet Utah Rangeland Health Standards (BLM 1997). Standards are descriptions of the desired condition of the biological and physical components and characteristics of rangelands that are applied to management of all public land resources and uses. Of the remaining five allotments, two are not meeting standards as a result of drought and past improper livestock grazing practices, but action has been taken to progress toward meeting those standards. Three allotments are yet to be assessed. The USFS completed rangeland health assessments in 2017 and 2018 at range trend study sites within the Shash Jáa Unit. Two study sites in the Babylon unit were meeting desired conditions. Two of the four study sites on the Bears Ears allotment were meeting desired conditions; the other two sites did not meet desired conditions because they had high tree or shrub cover values. There are no range trend studies in the small part of the Twin Spring allotment that are within the BENM.

Eleven of the 16 allotments in the BENM contain established vegetation monitoring locations within the Planning Area. There are also several range trend studies within the Twin Springs allotment but outside the BENM; these data are included in the trend information below. Vegetative trend data are important tools used in determining whether current management actions are effective in meeting or moving toward

management objectives related to ecological health. Trend ratings for the 13 BLM-administered allotments in the Planning Area were evaluated from 2016 to 2018 and are as follows: seven are stable, two are stable to up, two are down, and two are down with improving conditions (see Table LSG-1). Trend ratings for the USFS allotments have not been completed (a trend analysis was completed in 2007), but the areas generally show upward trends for ground cover and species diversity, and most areas were determined to be meeting desired conditions (BLM 2018b; USFS 2017).

Portions of the analysis area are decreasing in forage production due the encroachment of pinyon-juniper into sagebrush and grassland areas. Increases in shrub density are resulting from a lack of fire and historic grazing management practices. Additionally, availability of water is a limiting factor for livestock grazing, and livestock depend heavily on developed range improvements (e.g., stock ponds and springs) and natural water sources (e.g., intermittent streams, springs, and rock tanks) (BLM 2018b).

Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, states "Nothing in this proclamation shall be deemed to affect authorizations for livestock grazing, or administration thereof, on Federal lands within the monument. Livestock grazing within the monument shall continue to be governed by laws and regulations other than this proclamation." The BLM has continued to manage livestock according to the grazing regulations (43 CFR 4100)1 and the direction in the Monticello RMP since 2008. The USFS implemented the 1995 Rescissions Act allotment management plan process (Public Law 104-19 1995) and currently administers grazing under an adaptive management philosophy. There are no current formal Allotment Management Plans and/or rotational system on the allotments. In the absence of a formal grazing system, annual grazing applications using adaptive management, based on current available forage production, past utilization rates, monitoring data, climatic influences, and previous pasture movements, are used to set yearly use levels and pasture rotations. Two of the BLM allotments (Comb Wash and Cottonwood) have not been used by the permit holder for grazing in recent years (since 2002 and 2003, respectively), although the allotments are available for grazing. One of the USFS allotments (Babylon) has not been grazed since 2003; however, the allotment is suitable for grazing. Portions of the USFS Bears Ears (Texas and Butts Canyons) allotments are suitable for grazing but are not currently grazed due to topography. Portions of the Comb Wash allotment (Mule Canyon south of SR-95 and Arch, Fish, Owl, and Road Canyons) are unavailable for livestock grazing because of past Monticello RMP decisions.

3.9.2. Environmental Consequences

3.9.2.1. ANALYSIS METHODS

Impacts to livestock grazing are described in terms of change in area (acres) available (BLM)/suitable (USFS) for livestock grazing by allotment under each alternative. A reduction in area available (BLM)/suitable (USFS) for grazing could result in a reduction in permitted AUMs if area reductions lower the total available forage accessible to livestock. While reductions in area available (BLM)/suitable (USFS) for livestock grazing related to the alternatives would be restricted to Planning Area boundaries, impacts can only be assessed for each full allotment (including the portions that extend beyond the Planning Area). The differences in the amount of AUMs by alternative were calculated by estimating the available number of AUMs using the acres available (BLM)/suitable (USFS) for grazing and assuming an even distribution of AUMs across the allotments. It is also assumed that management direction regarding percent utilization of forage would not change from that described in Section 2.4.5.2.

3.9.2.2. DIRECT AND INDIRECT IMPACTS

Under all alternatives, some areas would be made unavailable (BLM)/not suitable (USFS) for livestock grazing. In the Indian Creek Unit, the alternatives consider making areas unavailable to reduce conflicts with recreational uses, sensitive cultural and paleontological resources, and riparian areas, and to avoid conflicts with relict vegetation. In the Shash Jáa Unit, the alternatives consider making areas unavailable (BLM)/not suitable (USFS) to reduce conflicts cultural resources and recreation, because allotments are not being currently grazed or because allotments are not currently meeting Utah Rangeland Health Standards. All action alternatives would include livestock grazing management actions that would reduce impacts on

[1] Grazing regulations found in the 2005 edition of the Code of Federal Regulations at 43 CFR part 4100 are currently in effect.

other resources and resource uses to provide for the proper care and management of relevant Monument objects and values compared to Alternative A (see Section 2.4.5.2).

There could be adverse impacts to livestock grazing (i.e., reduction in the area and AUMs available for grazing) on some allotments from proposed changes to areas available (BLM)/suitable (USFS) for livestock grazing under all of the alternatives. Adverse impacts may be the result of a decision to close portions of active grazing allotments within the BENM. Adverse impacts could also result from any use or activity that reduces the amount of available forage or restricts livestock movement and/or access to forage, such as fencing or other types of exclosures. The reduction in AUMs would reduce economic activity associated with livestock grazing that could affect employment and income for individual permittees; however, the scale of the changes in AUMs from the alternatives is not large enough to be quantifiable at the scale of the social and economic analysis (see Section 3.16). The areas available (BLM)/suitable (USFS) and unavailable (BLM)/not suitable (USFS) for livestock grazing and the potential changes in AUMs vary by alternative and are represented in Table LSG-2 below. The areas unavailable (BLM)/not suitable (USFS) for livestock grazing under the alternatives would be unavailable (BLM)/not suitable (USFS) for the life of the MMPs. Estimated changes in AUMs are used to provide a comparison between alternatives and are not meant to indicate actual adjustments to AUMs or changes to stocking levels under these alternatives, as those would be evaluated during permit renewal at the implementation level.

Minor beneficial indirect impacts to livestock grazing would result if an increase in the amount of forage available for livestock in areas available (BLM)/suitable (USFS) for grazing occurs as a result of management decisions, which may include vegetation treatments and controls for the spread of noxious weeds and invasive species (see Section 3.18 for more detail). Any management decisions that improve vegetative conditions would indirectly benefit livestock grazing through the preservation and maintenance of native vegetative communities, which in turn would contribute to overall rangeland health. In the long term, these management actions could result in a minor increase in the amount of available forage, although short-term impacts could be adverse if vegetation and available forage are initially reduced and/or treated pastures would not be available for use if it is determined that a rest period is needed for recovery.

Table LSG-2 describes the areas available (BLM)/suitable (USFS) and unavailable (BLM)/not suitable (USFS) for livestock grazing in the analysis area and Planning Area for each alternative. As shown in Table LSG-2, each alternative considers a reduction in public land available (BLM)/suitable (USFS) for livestock grazing, with the most allotments affected under Alternative B and the fewest allotments affected under Alternative A.

Under Alternative A, the greatest area would be available (BLM)/suitable (USFS) for livestock grazing and the smallest area would be unavailable (BLM)/not suitable (USFS) (see Maps 2-13 and 2-14). Five side canyons within the Comb Wash allotment would continue to be unavailable for livestock grazing under this alternative. The largest closure areas would occur with the unavailability for livestock grazing of Bridger Jack Mesa, Lavender Mesa, the Shay Canyon ACEC, developed recreation sites, and a portion of the Harts Draw allotment in Indian Creek Canyon from Kelly Ranch to the USFS boundary (limited to trailing only). However, this would not result in a reduction in AUMs for the Harts Draw and Indian Creek allotments (Table LSG-3).

Under Alternative B, 16 pastures in the Indian Creek Allotment would be unavailable for livestock grazing (see Map 2-16). These pastures would be available for trailing to allow permittee access to private lands and other areas available for grazing. Each of these pastures is wholly enclosed in the BENM. However, because these pastures are located within an allotment that extends outside BENM boundaries, making them unavailable to grazing would impact livestock grazing operations in the Planning Area and the analysis area. The closures of the 16 pastures would result in a reduction of available AUMs and permittees no longer being able to viably use portions of the Indian Creek allotment that are available to grazing. Additional impacts could include restriction of pasture rotation opportunities and impacts to current and planned research on sustainable livestock grazing on the Indian Creek allotment.

Under Alternative B, the areas made unavailable (BLM)/not suitable (USFS) for livestock grazing in the Shash Jáa Unit would include those described under Alternative A; however, additional areas would also be made unavailable (BLM)/not suitable (USFS) including an additional side canyon in Butler Wash, Arch Canyon on USFS-administered lands (including Texas and Butts Canyons), Milk Ranch Point in the Babylon

allotment, and the majority of the Comb Wash allotment (see Map 2-15 and Table LSG-3). Milk Ranch Point is characterized by a lack of water resources. Only 3,048 acres of the 9,156 acres in this pasture of the allotment have enough forage and the correct type of vegetation to be grazed. The unavailability of Milk Ranch Point for grazing would result in a loss of approximately 138 AUMs per year, based on USFS data from previous grazing in this pasture. This is equivalent to an approximately 11% decrease in permitted AUMs permitted. Across the Planning Area, this alternative would have the largest overall area unavailable (BLM)/not suitable (USFS) to grazing. The magnitude of adverse impacts to livestock grazing would be greater under Alternative B than under Alternatives A, C, D, and E (see Table LSG-2). The Comb Wash allotment has not been grazed since 2002; therefore, making portions of this allotment unavailable to grazing would have very little practical impact in these areas at present but could limit potential grazing in the allotment in the future.

Under Alternative C, no additional closures to livestock grazing are proposed for the Indian Creek Unit compared with Alternative A (Table LSG-3) (see Map 2-18). Under Alternative C, closures in the Shash Jáa Unit would be the same as described for Alternative D and very similar to Alternative E (Table LSG-3) (see Map 2-17). Alternative C would implement an adaptive management strategy, and monitoring would be used to assist with meeting or progressing towards meeting Utah Rangeland Health Standards (BLM 1997) or USFS desired conditions for rangelands. Areas may be subject to additional management actions, which may include making areas unavailable (BLM)/not suitable (USFS) for grazing; however, as these management actions cannot be anticipated, only the management actions presented under this alternative are analyzed. As a result of adaptive management, there is a possibility that the magnitude of adverse impacts to livestock grazing would be slightly greater under Alternative C than under Alternatives A, D, and E (see Table LSG-2).

Under Alternatives D and E, the unavailability of Shay Canyon, the upper Indian Creek corridor, Bridger Jack Mesa, Lavender Mesa, and developed recreation sites to livestock grazing would not result in a reduction of AUMs for the Harts Draw and Indian Creek allotments in the Indian Creek Unit because there would be a smaller area unavailable for grazing than under Alternative A (see Table LSG-3); the unsuitability of Arch Canyon on USFS lands (including Texas and Butts Canyons) and developed recreation sites to livestock grazing may result in a reduction of AUMs in the Bears Ears and Babylon allotments in the Shash Jáa Unit (see Table LSG-2 and Table LSG-3) (see Maps 2-20 and 2-21). Alternative E would make one additional Butler Wash side canyon unavailable to grazing yet would not be anticipated to have a measurable influence on available AUMs in the Tank Bench Brushy Basin allotment in the Shash Jáa Unit (see Map 2-21) but would help reduce impacts on other Monument objects and values. This would not impact existing grazing levels but could limit potential grazing in this allotment in the future. In addition, on USFS-administered land, the Babylon allotment has not been grazed since 2003 and a portion of the Bears Ears allotment is inaccessible due to topography; therefore, making portions of these allotments unavailable (BLM)/not suitable (USFS) to grazing would have very little practical impact in these areas at present but could limit potential grazing in these allotments in the future. Alternatives D and E would make a slightly larger area of the Shash Jáa Unit made unavailable (BLM)/not suitable (USFS) for grazing compared to Alternative A (see Table LSG-2). In general, Alternative B would have a greater impact on grazing than Alternatives A, C, D, or E because Alternative B would result in less area available (BLM)/suitable (USFS) for grazing.

Table LSG-1. Summary of Allotments and Existing Conditions in the Livestock Grazing Analysis Area

Allotment Name	Unit*	Total Area (acres)	Total Area Unavailable (BLM)/ Not Suitable (USFS) for Grazing (acres)	Area within the Planning Area (acres)	Riparian Area in the Planning Area (acres)	Area Unavailable (BLM)/ Not Suitable (USFS) for Grazing in the Planning Area (acres)	AUMs**	Vegetative Trend***/ Rangeland Health Standards ****
BLM								
Comb Wash	SJ	75,246	12,948	29,385	1,835	4,633	734	D/NMS
Cottonwood	SJ	74,892	0	11,017	476	0	1,434	D, I/NR
Hart Point	IC	19,994	100	3,848	0	0	1,080	S/MS
Harts Draw	IC	65,753	309	13,338	217	260	1,100	S-U/NMS
Indian Creek	IC	272,580	43,199	57,659	1,676	7,027	8,518	S/NR
Lake Canyon	SJ	623,105	21,556	2,242	0	0	5,009	S/MS
Lone Cedar	IC	19,466	0	4,178	0	0	1,966	S/MS
Perkins North	SJ	64,308	19	15,767	744	19	4,626	S/MS
Perkins South	SJ	62,797	2,294	3,971	336	0	2,716	D, I/MS
Slickhorn	SJ	146,142	17,681	2,614	0	2	1,795	S-U/MS
Tank Bench Brushy Basin	SJ	79,445	149	10,406	360	149	3,589	S/MS
Texas-Muley	SJ	68,897	976	24,094	244	7	1,960	D/NR
White Mesa	SJ	61,447	40	5,324	146	40	4,374	S/MS
USFS								
Babylon	SJ	25,980	0	14,834	0	0	1,246	S-U
Bears Ears	SJ	14,993	0	14,782	0	0	1,210	S-U
Twin Springs	SJ	62,309	0	2,903	0	0	2,690	S-U
TOTAL		1,728,354	99,271	216,362	6,034	12,137	44,047	

Sources: BLM (2018b), USFS (2018)

*IC= Indian Creek Unit, SJ= Shash Jáa Unit

** AUMs for the entire allotment, which encompasses land outside the Planning Area

***D= Down, D,I= Down, Improving, S= Stable, S-U= Stable to Up

****MS= Meeting Standards, NMS= Not Meeting Standards, Action Taken, NR= Not Rated

Table LSG-2. Comparison of Areas Available (BLM)/Suitable (USFS) for Grazing

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Area available for livestock grazing in the Planning Area (acres)	189,445	112,889	185,368	185,409	185,347
Area available for livestock grazing in the analysis area (acres)	1,629,081	1,465,519	1,537,838	1,537,875	1,537,875
Area unavailable for livestock grazing in the Planning Area (acres)	12,090 (377 limited to trailing only)	88,645 (46,268 limited to trailing only)	16,165 (377 limited to trailing only)	16,125 (336 limited to trailing only)	16,187 (336 limited to trailing only)
Area unavailable for livestock grazing in the analysis area (acres)	99,272	163,562	91,243	91,206	91,206
Available AUMs in the analysis area (estimated by % of area available for grazing)	44,047	39,625	41,580	41,581	41,581

Note: Estimated changes in available AUMs between alternatives do not necessarily reflect proposed reductions or changes in on-the-ground forage required to sustain livestock because not all acres provide accessible forage or are equal in forage production (e.g., a talus slope versus semi-desert grassland). In addition, the unavailability of acres for grazing in a particular area may be considered minor in relation to the scale of the affected allotment.

Table LSG-3. Comparison of BLM- and USFS-Administered Lands Available (BLM)/Suitable (USFS) for Grazing in Each Allotment in the BENM

Allotment	Alternative A Available/Suitable or Unavailable/Not Suitable (acres)	Alternative B Available/Suitable or Unavailable/Not Suitable (acres)	Alternative C Available/Suitable or Unavailable/Not Suitable (acres)	Alternative D Available/Suitable or Unavailable/Not Suitable (acres)	Alternative E Available/Suitable or Unavailable/Not Suitable (acres)
Indian Creek Unit*	**64,520/7,255**	**25,507/46,268**	**64,520/7,255**	**64,561/7,215**	**64,561/7,215**
Hart Point	2,840/0	No change	No change	No change	No change
Harts Draw	12,133/265 (limited to trailing only)	No change	No change	No change	No change
Indian Creek	45,769/6,990 (112 acres limited to trailing only)	6,756/46,003 (limited to trailing only)	No change	45,810/6,950 (71 acres limited to trailing only)	45,810/6,950 (71 acres limited to trailing only)
Lone Cedar	3,778/0	No change	No change	No change	No change
Shash Jáa Unit	**124,923/4,834**	**87,382/42,377**	**120,848/8,910**	**Same as Alt C**	**120,786/8,972**
Babylon	14,834/0	5,222/9,611	14,146/688	Same as Alt C	Same as Alt C
Bears Ears	14,782/0	11,829/2,954	11,861/2,921	Same as Alt C	Same as Alt C
Comb Wash	24,945/4,617	0/29,564	24,479/5,084	Same as Alt C	Same as Alt C
Cottonwood	10,694/0	No change	No change	No change	No change
Lake Canyon	2,242/0	No change	No change	No change	No change
Perkins North	13,238/19	No change	No change	No change	No change
Perkins South	3,417/0	No change	No change	No change	No change
Slickhorn	2,614/2	No change	No change	No change	No change
Tank Bench Brushy Basin	9,217/149	9,186/180	No change	No change	9,155/211
Texas-Muley	21,364/7	No change	No change	No change	No change
Twin Springs	2,903/0	No change	No change	No change	No change
White Mesa	4,673/40	No change	No change	No change	No change

* Areas closed to grazing in the Indian Creek Unit are limited to livestock trailing only. Areas closed to grazing in the Shash Jáa Unit are closed to both grazing and livestock trailing.

3.10. Paleontological and Geologic Resources

The paleontological resources in the BENM are among the richest and most significant in the United States (see Appendix A).

The analysis area for paleontological resources is the Planning Area. The analysis area was selected because this is the area within which the management considered in the MMPs could impact paleontological resources.

3.10.1. Affected Environment

The Paleontological Resources Preservation Act of 2009 defines a "paleontological resource" as any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of interest and provide information about the history of life on earth. Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, identifies the importance of these resources (see Appendix A).

The AMS (Section 2.9) details paleontological resources and their management, protection, collection restrictions, research permits, indicator application, trends, and forecast. The BLM and USFS are responsible for managing fossil resources on the lands they administer. Over 300 paleontological localities, including plants, invertebrates, and trace fossils, have been recorded in the two units.

The geology of the BENM is characterized by sedimentary units dating from the Jurassic, Triassic, Permian, and Pennsylvanian periods. Fossils preserved in these deposits vary from vertebrate fossils such as reptiles to plant fossils. The BENM also contains Pleistocene and Holocene epoch sediments in which fossils of large mammals, such as mammoths, short-faced bears, ground sloths, and camels, as well as a wide variety of small vertebrates, have been found. The geologic units and basic fossil occurrences are similar for the Indian Creek and Shash Jáa Units within the BENM (AMS Section 2.9).

Under the Potential Fossil Yield Classification (PFYC) system, geologic units are classified based on the relative abundance of vertebrate fossils or uncommon invertebrate or plant fossils and their sensitivity to adverse impacts. PFYC 1 has a nominal risk of fossil resource occurrence; PFYC 2 is unlikely to contain fossils or paleontological resources; PFYC 3 fossils vary in significance, abundance, and predictable occurrence or have sedimentary units of unknown fossil potential; PFYC 4 has a high risk of occurrence with a lower risk of damage (often due to vegetation or soil cover); and PFYC 5 has a high risk of occurrence and damage with increased management concerns. The classification system serves as an indicator and provides baseline guidance for assessing impacts to paleontological resources (AMS Section 2.9.3). In many situations, the classification is also an intermediate step in analysis and used to identify additional mitigation needs (BLM Handbook 8270-18) (see Maps PAL-1 and PAL-2).

Table PAL-1 summarizes the PFYC on lands administered by the BLM and USFS in both units. PFYC acreages are regularly inventoried, so PFYC acreages listed in Table PAL-1 may change in the future.

Table PAL-1. Distribution of PFYC 2–5 Areas in the Shash Jáa and Indian Creek Units

Unit	Indian Creek	Shash Jáa	Grand Total
PFYC 2 (acres)	**45,651**	**34,715**	**80,366**
BLM	45,651	29,038	74,689
USFS	<1	5,677	5,677
PFYC 3 (acres)	**9,364**	**72,150**	**81,514**
BLM	9,364	60,907	70,271
USFS		11,243	11,243
PFYC 4 (acres)	**16,856**	**21,982**	**38,837**
BLM	16,856	6,322	23,177
USFS	<1	15,660	15,660
PFYC 5 (acres)	**0**	**956**	**956**
BLM	0	956	956
USFS	0	0	0
Grand Total (acres)	**71,871**	**129,803**	**201,673**

Public interest in paleontological destinations continues to be very high. With that comes an increasing trend of theft and vandalism. This makes providing public access to these resources while still protecting them a challenge (AMS Section 2.9.6.2). Some American Indian Tribes consider paleontological resources to be cultural resources. Cultural resources are discussed in Section 3.5. The State of Utah supports scientific efforts to remove and study paleontological artifacts. When appropriate, the State of Utah prefers that artifacts remain as close as possible to the area of origination (e.g., local museums and exhibits).

3.10.2. Environmental Consequences

3.10.2.1. ANALYSIS METHODS

Direct impacts to paleontological fossil resources occur from surface and subsurface disturbances. Impacts are typically permanent, and the fossil resource may lose its scientific and educational value. Human causes of this disturbance include construction, recreational or livestock trampling, vandalism, and improper collection. Natural causes of disturbance include erosion and exposure of fossils to the elements. Accordingly, the amount of PFYC areas open to human disturbance is the indicator used to estimate potential impacts of the MMPs on paleontological resources. For this analysis, it is assumed that the risk of impacts would be increased by management actions that provide access for potential surface-disturbing activities to PFYC 3, 4, and 5 areas.

3.10.2.2. DIRECT AND INDIRECT IMPACTS

3.10.2.2.1. Impacts from Paleontological Resource Management Actions

In general, all action alternatives would result in less potential for surface disturbance affecting paleontological resources than Alternative A and include more management actions addressing potential impacts to paleontological resources and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.6.2). Under all alternatives, casual collection of petrified wood would not be allowed in the Monument, which would reduce impacts to this resource. Prohibiting casual collection of fossil resources under Alternatives B, C, D, and E would reduce impacts, compared to Alternative A, by ensuring resource protection for future study and education. Impacts such as human-caused erosion and subsequent exposure would also be reduced due to the elimination of casual fossil collection within the Monument boundaries. Under Alternative A, National Forest System lands in the analysis area would be closed to casual collection, but BLM-administered land would be open to recreational collecting for personal, noncommercial use. In general, Alternative A would present a higher risk of damage to paleontological resources because it would allow casual fossil collection on BLM lands.

Required fossil surveys for climbing permits under Alternative D and more comprehensive surveys under Alternatives B, C, and E—with progressive steps for rerouting climbing approach trails, route closures, and closing trails—would reduce adverse impacts from human-induced erosion and climbing equipment, as well as reduce further impacts from repeated climbs on the same resource over time. For related travel management, not designating new travel routes at the implementation level and re-routing, closing, or mitigating under Alternatives C and E would also reduce impacts to the resource from vehicles degrading vegetation and causing erosion or exposure of the resource. Closing Upper Davis Canyon to OHV use under Alternative B would provide more protection for paleontological resources in that area than under Alternatives C, D, and E.

The survey requirements for PFYC 3, 4, and 5 under Alternatives B, C, D, and E would reduce potential impacts from surface-disturbing activities, compared to Alternative A, including damage, erosion, and exposure. When impacts cannot be avoided, mitigation may reduce those impacts by removing the fossil for further study or adjusting the project scope to avoid the resource. Table PAL-2 compares PFYC survey requirements for each alternative in both units. Increased survey requirements would provide more opportunities to identify significant paleontological resources and implement site-specific management to minimize impacts. The Authorized Officer (BLM)/Responsible Official (USFS) also has discretion to require surveys, if needed, under all alternatives.

Table PAL-2. Survey Requirements by PFYC in the Shash Jáa and Indian Creek Units

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
PFYC area survey requirements (acres)	956 (PFYC 5)	121,308 (PFYC 3, 4, and 5)	121,308 (PFYC 3, 4, and 5)	39,794 (PFYC 4 and 5)	39,794 (PFYC 4 and 5)

3.10.2.2.2. Impacts from Travel Management Actions

OHV travel in areas that are designated as OHV limited has the potential to disturb or displace paleontological resources by allowing more people near the resources, which could result in fossil theft, vandalism, and inadvertent physical damage from OHVs. There would be a lower risk of these adverse

impacts in areas that are closed to OHV travel. Table PAL-3 shows the acreages of PFYC areas within BLM- and USFS-administered lands that would be designated as OHV limited or closed.

Table PAL-3. Travel, Limited and Closed Designations by PFYC 4 and 5, Both Units

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Limited (PFYC 4 and 5) (acres)	37,420	20,899	34,420	37,420	37,420
Closed (PFYC 4 and 5) (acres)	2,293	18,899	2,293	2,293	2,293

3.10.2.2.3. Impacts from Recreation Management Actions

Recreational use would impact paleontological resources through surface or physical disturbance of fossil resources, increased potential for vandalism and theft, and exposure of the resource over time from soil erosion. In general, Alternatives D and E would provide some restrictions to limit surface disturbance; however, they allow for dispersed camping, target shooting, and fewer restrictions on hiking and mountain biking, all of which present a risk to paleontological resources. The Arch Canyon Backcountry RMZ and Shay Canyon ACEC would have moderately lower group sizes requiring SRPs in Alternative E as compared with Alternative D. These group size thresholds requiring an SRP may help protect significant resources in these areas because permitted groups with stipulations have less potential for surface disturbance. Alternatives B and C would provide for greater restrictions and limitations on recreational use and access, thereby increasing paleontological resource protection. Examples include prohibiting target shooting (Alternative B), limiting camping to designated sites (Alternative B), not allowing commercial or group activities (Alternative B), and reducing permit numbers for commercial or group activities (Alternative C). Some decisions under Alternative C would also allow for monitoring the impacts of recreational use. When needed, this would provide the flexibility to reduce permit numbers or enact other restrictions to help reduce impacts to fossil resources. However, Alternative C would require implementation of the paleontological monitoring plan, which would be dependent on available funding. Under Alternatives B, C, and E, the BLM and the USFS would close or reroute trails and access points for both casual and permitted use if surveys indicate the presence of significant paleontological resources. Under Alternatives C and E, if trails and access points cannot be rerouted, the BLM and the USFS would provide specific educational information to climbers on best climbing practices to avoid or minimize impacts to paleontological resources. In general, recreation decisions under all the action alternatives would result in fewer potential impacts to paleontological resources than Alternative A.

3.10.2.2.4. Impacts from Grazing Management Actions

Proposed grazing management actions could impact fossil resources due to disturbance of vegetation, erosion of soil, and exposure from trampling by livestock and OHV and non-motorized use to manage livestock. There would also be a higher risk of disturbance at livestock concentration areas (e.g., fences, water sources). However, managing livestock grazing to meet or make progress toward Utah Rangeland Health Standards or USFS desired conditions for rangelands, and implementing BMPs to minimize surface disturbance for site-specific permitting renewals would reduce impacts to paleontological resources. Conducting site surveys for these resources in affected grazing areas and monitoring and mitigation would also help reduce these impacts. Areas that would be made unavailable (BLM)/not suitable (USFS) for grazing would eliminate the potential for grazing impacts to paleontological resources. Alternative B would increase the areas unavailable (BLM)/not suitable (USFS) for grazing in comparison to Alternatives C, D, and E. All action alternatives would increase the areas unavailable (BLM)/not suitable (USFS) to grazing in comparison to Alternative A.

Table PAL-4 shows the areas available (BLM)/suitable (USFS) and unavailable (BLM)/not suitable (USFS) for livestock grazing in both units on areas administered by the BLM and USFS that have a high potential for paleontological resources. Alternative B would be most protective of paleontological resources with respect to impacts from grazing. Alternative B would have less area available (BLM)/suitable (USFS) to grazing and more area unavailable (BLM)/not suitable (USFS) to grazing in areas with high potential for paleontological resources than Alternatives A, C, D, and E. While Alternatives D and E would have more areas of PFYC 4 and 5 available for livestock grazing compared to Alternative A, management actions that are common to all action alternatives, such as using mitigation measures to minimize impacts on paleontological sites would help reduce impacts on paleontological resources compared to Alternative A.

Table PAL-4. Areas Available (BLM)/Suitable (USFS) and Unavailable (BLM)/Not Suitable (USFS) for Grazing in PFYC 4 and 5, Both Units

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Available/Suitable (PFYC 4 and 5) (acres)	38,471	19,280	38,477	38,515	38,515
Unavailable/Not Suitable (PFYC 4 and 5) (acres)	1,327	20,518	1,320	1,282	1,244

3.10.2.2.5. Impacts from Lands and Realty Management Actions

Alternatives A through E would provide lands and realty designations including identifying areas as open, avoidance, and exclusion for new ROWs. Areas open to ROWs are at risk of impacts from future infrastructure or related projects that result in surface disturbance from construction. The potential for ongoing impacts to fossil resources in avoidance areas would also occur if new infrastructure and access were granted; however, this is unlikely because granting authorizations in avoidance areas would not be considered unless there were no other demonstrated alternative routes or sites for the proposed use.

Table PAL-5 shows the areas that would be identified as open, avoidance, and exclusion areas for ROWs that have a high potential for paleontological resources. Alternative A would provide the least protection for fossil resources because it would have the most area in PFYC 4 and 5 areas designated as open. Alternatives D and E would provide fewer open areas in PFYC 4 and 5. Alternative C would have no open areas but would have avoidance areas. Alternative B would manage all areas as ROW exclusion, which would preclude the potential for ROW impacts. Potential impacts for specific permitted activities in open and avoidance areas could be reduced through mitigation and BMPs based on site surveys.

Table PAL-5. Open, Avoidance, and Exclusion Areas for ROWs by PFYC 4 and 5, Both Units

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open (PFYC 4 and 5) (acres)	32,890	N/A	N/A	16,008	16,008
Avoidance (PFYC 4 and 5) (acres)	5,903	N/A	10,994	23,280	23,280
Excluded (PFYC 4 and 5) (acres)	1,101	39,798	28,818	510	510

3.10.2.2.6. Impacts from Special Designations

Special designations would have beneficial impacts on paleontological resources by reducing the types and frequencies of access, use, and development, thereby reducing the potential for disturbance to fossil resources. In decisions carried forward for all alternatives, the Lavender Mesa, Shay Canyon, and San Juan River ACECs would prohibit campfires, would be associated with ROW decisions that would reduce risk of impacts on fossil resources, and would be associated with OHV area designations that would reduce impacts on fossil resources. Reducing public access and use would also reduce the potential for unauthorized collection of fossils or damage to them by foot or vehicular access. In addition, special designations for areas with extensive fossil resources may also provide interpretive and educational opportunities.

3.11. Recreation

Recreation opportunities in the Planning Area are managed by the BLM and USFS. The Planning Area is surrounded by public lands that are popular with a variety of recreational users; these popular areas include Glen Canyon National Recreation Area, Goosenecks State Park, Canyonlands National Park, Natural Bridges National Monument, the BLM MFO, and the Manti-La Sal National Forest.

Public recreational uses in the Planning Area include cultural site visitation, heritage tourism, rock climbing, angling, hunting, hiking, backpacking, canyoneering, rafting and boating, mountain biking, OHV riding, and horseback riding, as detailed in Section 2.10 of the AMS. Current recreational uses are largely consistent with recreation management goals established in the Monticello RMP and Manti-La Sal LRMP. Recreation is pursued individually, in groups, and under SRPs (BLM) and SUAs (USFS). SRPs and SUAs are authorizations that allow for commercial, competitive, and group recreational use of BLM-administered

and USFS-administered public lands and related waters. In addition, ISRPs are issued in high-use areas or where recreation use requires special administration.

Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, identified recreational opportunities in the Planning Area as values of the BENM. These values include managing lands for world-class outdoor recreational opportunities, meeting the needs of a growing travel and tourism sector, providing opportunities for cultural and heritage tourism, experiencing natural dark skies and quiet space, and providing opportunities for education and interpretation. Because travel management and soundscape decisions are linked to the Proclamation's recreation values, travel management and soundscapes are also included under the recreation resources analysis. Discussion of existing travel management in the Planning Area can be found in Section 3.17.1.

Recreation management areas on BLM-administered lands include SRMAs and Extensive Recreation Management Areas (ERMAs). The BLM manages for recreation use on certain lands in accordance with the level of public use (BLM Manual 8320-1) and with defined targeted outcomes (see Appendix G). Recreation management areas on USFS-administered lands include Recreation Opportunity Spectrum (ROS) classifications, which define recreation settings and categorize them into six distinct classes. Routes open to public use are administered by the BLM under travel management decisions, and the USFS manages routes via a motor vehicle use map.

Indicators that can be used to evaluate impacts on recreation include the size of areas managed to provide for different recreational user groups and total miles of routes and trails open and closed to OHV and non-motorized use.

The analysis area for recreation is the BLM MFO. This area was selected because it is the area within which changes in the management of recreation in the Planning Area may affect recreational experiences of public land users.

3.11.1. Affected Environment

3.11.1.1. SHASH JÁA UNIT

The Shash Jáa Unit is a popular destination because of the diversity of its recreation activities, from individual, dispersed uses to group and developed uses. Users report a high degree of satisfaction with their recreational experiences in the unit. Key features for recreation management are described in Section 2.10 of the AMS and are also included in the description of the existing management below. Cultural site visitation is a prominent recreational use in the Shash Jáa Unit. User-created trails exist to access cultural sites within the unit; these social trails can present management challenges and cause resource impacts.

3.11.1.1.1. BLM-Administered Lands

Cedar Mesa Special Recreation Management Area

The existing Cedar Mesa SRMA is approximately 407,098 acres. Most of the Cedar Mesa SRMA is located in the BLM MFO, outside of the Shash Jáa Unit. The portions of the Cedar Mesa SRMA within the Shash Jáa Unit encompass 81,760 acres, or 84% of the BLM-administered lands in the Unit (see Map 2-22). The Cedar Mesa SRMA (and the other SRMAs described below) are all managed to support the Monticello RMP goals and objectives, setting prescriptions, and targeted outcomes for the area (Appendix K of the 2008 Monticello RMP and ROD). Management actions specific to the Cedar Mesa SRMA within the Shash Jáa Unit can be found in Table 3-10 of the AMS. Estimated annual visitation to the Cedar Mesa SRMA within the Shash Jáa Unit was 36,994 visits. The high-use seasons are spring and fall. The primary recreation activities that occur within the Cedar Mesa SRMA portion of the Shash Jáa Unit include cultural site visitation, backcountry hiking and backpacking, horseback riding, OHV riding, camping, and heritage tourism (Ancestral Puebloan and Mormon Pioneer). Cedar Mesa SRMA is a BLM-administered Special Area. An ISRP would be required for individual (i.e., private, non-commercial) recreation use in Special Areas where resources need to be protected by special management and control measures and a permit system for individual use would achieve management objectives. Within the Shash Jáa Unit, four trailheads are currently part of the Cedar Mesa permit system: South Mule Canyon, North Mule Canyon, Lower Fish Creek, and Moon House. ISRPs are required for overnight backpacking, horseback riding (Lower Fish Creek only), and day hiking at these locations. Moon House is limited to day hiking.

Recreation Management Zones of the Cedar Mesa Special Recreation Management Area

Within the Cedar Mesa SRMA in the Shash Jáa Unit, there are two existing RMZs: Comb Ridge and McLoyd Canyon-Moon House. Comb Ridge RMZ encompasses 29,726 acres of the Shash Jáa Unit. The RMZ generally follows Comb Ridge and includes Butler Wash and Comb Wash on each side of the ridge (see Map 2-22). The area was designated as an RMZ within the SRMA because of its easy vehicular accessibility, high level of visitation and popularity, and density of significant cultural sites and rock writings. Current management and objectives can be found in Table 3.10 of the AMS.

The entire 316-acre Moon House satellite area of the Shash Jáa Unit is within the McLoyd Canyon-Moon House RMZ (see Map 2-22). The area is designated as an RMZ within the SRMA due to its accessibility and the unique architecture of the Moon House. Restrictions and management prescriptions are intended to minimize conflict between recreational use and cultural resources. Current management specific to the RMZ within the Shash Jáa Unit can be found in Table 2-9 of this document and Table 3.10 of the AMS.

San Juan River Special Recreation Management Area

The existing San Juan River SRMA is approximately 9,859 acres in size. A portion of the Shash Jáa Unit contains 3,990 acres of the San Juan River SRMA, where the Shash Jáa Unit borders the San Juan River between Butler Wash and Lime Ridge for approximately 4 river miles (see Map 2-22). Primary recreation activities that are currently managed as targeted outcomes within the Shash Jáa portion of the SRMA include cultural site visitation, river use, hiking, and camping. OHV riding and heritage tourism are common activities in the area, but they are not currently managed for as a targeted outcome of the SRMA. Popular recreation sites within this portion of the Shash Jáa Unit feature historic and cultural sites including River House, San Juan Hill (a segment of the historic Hole-in-the-Rock Trail), Barton's Trading Post, and the Butler Wash Petroglyph Panels. There are minimal BLM-developed recreation facilities within this portion of the Shash Jáa Unit, including an information kiosk at River House and a parking area at the base of San Juan Hill. Excluding river travel, the area is primarily accessed by four-wheel-drive vehicles and OHVs by way of a designated route in Comb Wash, south of US-163.

Monticello Extensive Recreation Management Area

The 11,642 acres of BLM-administered lands within the Shash Jáa Unit that is not included in the Cedar Mesa SRMA or San Juan River SRMA is managed as part of the Monticello ERMA. ERMA lands are managed to provide an undeveloped setting where visitors can recreate in a generally unregulated manner if the use is consistent with other resource values. ERMA lands typically receive less-intensive use and require less staff and/or facilities to manage. There are no BLM-developed recreation facilities within the Monticello ERMA within the Shash Jáa Unit.

Special Recreation Permits

The SRPs within the Shash Jáa Unit (excluding ISRPs for the Cedar Mesa Permit System) include authorizations for guided hiking and backpacking, hunting, biking, camping, vehicle tours, OHV tours, horseback riding, cultural and historical site visitation including cultural and heritage tourism activities, and specific annual events. The BLM MFO processes applications on a case-by-case basis as received.

The predominant SRP use is commercially guided hiking and backpacking. There are currently 46 SRP operators who provide guided hiking and/or backpacking opportunities in the Cedar Mesa SRMA. There are three annual non-competitive OHV events currently authorized within the Shash Jáa Unit, which include San Juan ATV Safari, Jeep Jamboree, and Easter Jeep Safari. The Jeep Jamboree and Easter Jeep Safari occur in the spring, while the San Juan ATV Safari occurs in September. Each of the events occurs over 2 to 3 days on specific designated routes throughout the MFO and Manti-La Sal National Forest. Three of these routes are within the Shash Jáa Unit. The Arch Canyon route is used by each event. The Jeep Jamboree and Easter Jeep Safari also use the Hotel Rock route. The San Juan ATV Safari uses the River House route. There are currently 18 guided hunting SRPs and seven guided biking SRPs that authorize use within the Shash Jáa Unit. Hunters must stay within State of Utah-authorized hunting units. Guided biking within the Shash Jáa Unit is infrequent (5–10 trips per year).

3.11.1.1.2. USFS-Administered Lands

There are no SRMA-like management areas on USFS-administered lands within the Shash Jáa Unit. The USFS manages according to the existing ROS classifications for Primitive, Semi-Primitive Nonmotorized, Semi-Primitive Motorized, and Roaded Natural. All recreation is dispersed; there are no developed sites within the Shash Jáa Unit. Common dispersed recreation activities within the USFS portion of the Shash Jáa Unit include viewing natural features, hiking, backpacking, visiting cultural sites, OHV touring, driving for pleasure, camping, hunting, and picnicking. Less-common activities requiring more specialized recreation equipment include rock climbing and canyoneering. Popular locations or attractions include the Bears Ears Buttes, Arch Canyon and its overlook, Texas Canyon, Doll House, South Elk Ridge, and South Long Point.

Special Use Authorizations

The USFS-administered lands in the Shash Jáa Unit are administered according to use: Arch Canyon Hammond Canyon Use Area and the Monticello Use Area. Recreation SUAs are issued for commercial and non-commercial group use of USFS-administered lands to manage and provide specific recreational opportunities to the public and economic benefits to neighboring communities. Some permits are issued for a year or less (one-time SUA) whereas others are issued for businesses for up to 10 years. Table 2-38 of the AMS provides a summary of recreational SUAs on USFS-administered lands.

3.11.1.2. INDIAN CREEK UNIT

The Indian Creek Unit is an internationally recognized rock-climbing destination and scenic gateway to the Needles District of Canyonlands National Park. The Indian Creek Unit is primarily accessed by SR-211 (Indian Creek Corridor Scenic Byway), which is the only paved road in this unit. Parts of the Unit can be viewed from popular scenic viewpoints located on other nearby public lands (e.g., Island in the Sky and the Needles Overlook). Key features for recreation management are described in Section 2.10 of the AMS and are also included in the description of the existing management below. User-created social trails exist to access rock writings and climbing routes within the Indian Creek Unit; these social trails can present management challenges and cause resource impacts.

3.11.1.2.1. BLM-Administered Lands

Existing management actions and goals for the Indian Creek Unit are specified in the Monticello RMP. The RMP establishes public recreation guidelines for the Indian Creek Unit through the Indian Creek SRMA, ERMA, and SRPs that authorize special recreational uses.

Indian Creek Special Recreation Management Area

The existing Indian Creek SRMA is approximately 89,271 acres in size. A portion of the SRMA is located in the BLM MFO but outside of the Indian Creek Unit. The portion of the SRMA in the Indian Creek Unit includes the Indian Creek Canyon corridor, Newspaper Rock, Donnelly Canyon, Cottonwood Creek, lower Lavender Canyon, lower Davis Canyon, and the Six Shooter Peaks. High-use seasons are spring and fall, with primary recreational activities including rock climbing, OHV riding, cultural site visitation, sightseeing, and camping. The SRMA is also a gateway recreation area for visitors to Canyonlands National Park's Needles District, where visitors frequently stop at the Newspaper Rock interpretive site, use BLM-provided facilities, and camp at BLM campgrounds and other dispersed areas within the SRMA.

With the exception of BLM-developed recreational facilities and the Dugout Ranch, which is a private in-holding owned by The Nature Conservancy, the SRMA is generally primitive and undeveloped. Developed sites include the Newspaper Rock interpretive site, Donnelly Canyon parking area, Cottonwood Road vault toilets and information kiosk, and Superbowl Campground. Other recreation sites include multiple dispersed climbing walls throughout the Indian Creek and Cottonwood Creek corridors, the Elk Ridge Road Scenic Backway, the Bridger Jack Mesa designated dispersed camping area, and the Salt Creek, Davis Canyon, and Lavender Canyon trailheads. There are currently no fees or permits required for non-commercial recreation use in the SRMA, with the exception of camping at Superbowl Campground.

Extensive Recreation Management Area

The BLM-administered lands within the Indian Creek Unit but outside the Indian Creek SRMA are managed as part of the Monticello ERMA. There are no BLM-developed recreation facilities within the Monticello ERMA in the Indian Creek Unit. The southern trailhead for the Salt Creek Trail, a popular backpacking route through the Canyonlands National Park Needles District, is accessed from the ERMA.

Special Recreation Permits

The MFO processes applications on a case-by-case basis as received; there are no current limitations on the amount of SRP use authorized. As shown in Section 2.10 of the AMS, the SRPs within the Indian Creek Unit include authorizations for guided climbing, hunting, biking, and annual events. The predominant SRP use is commercially guided rock climbing, with 22 current SRP operators serving typically 100 to 300 visitors annually at 14 climbing walls within the Indian Creek Unit.

There are currently 18 guided hunting SRPs and seven guided biking SRPs that authorize use within the Indian Creek Unit. Hunting typically occurs outside of the popular Indian Creek SRMA and takes place in the mesa top areas within the ERMA. Hunters must stay within State of Utah-authorized hunting units. Guided biking within the Planning Area is infrequent (five to 10 trips per year) and typically occurs on the Elk Ridge Road Scenic Backway.

Annual events currently authorized within the Planning Area include the San Juan ATV Safari, a 3-day non-competitive OHV event in September on designated routes (a portion of this event occurs on the Bridger Jack route in the Planning Area), and the Newspaper Rock 10K running event in October. The 10K race takes place on SR-211, with the Newspaper Rock parking area for staging. The Moab 200 Ultra-running competitive event is authorized annually in October.

3.11.1.3. OTHER RECREATIONAL VALUES

3.11.1.3.1. Soundscapes

Although the Monticello RMP does not include specific management prescriptions for soundscapes, goals and objectives emphasizing protection of natural resource values apply within the Planning Area and contribute to maintaining a quiet recreational experience in areas managed for opportunities for solitude or primitive, unconfined recreation. Soundscape studies conducted on public lands surrounding the BENM reveal that the most common natural sounds are wind, birds, and insects. Aircrafts and vehicles are the most common non-natural sounds (Ambrose 2008). Based on acoustic monitoring and audibility logging in a similar setting, the Grand Staircase-Escalante National Monument (Vittum-Jones et al. 2015), the most frequently encountered unnatural sound sources were high-altitude jet aircraft and vehicles/engines. Dominant ambient natural sounds included the wind and birdsong, as well as natural quiet. The emphasis for types of use guides soundscape decisions; for motorized, developed settings, the soundscape is generally composed of unnatural, human-made noise as well as natural quiet; for non-motorized, undeveloped settings, the soundscape is generally composed of natural quiet.

3.11.2. Environmental Consequences

3.11.2.1. ANALYSIS METHODS

Management actions for fire management, hazards management, special status species, vegetation management, and woodlands would have the same impacts on recreation resources as described in Recreation Resources, Section 4.3.10.1 of the Monticello Proposed RMP and Final EIS (BLM 2008b) and are not discussed further. This is because management of these resources analyzed in the MMPs/EIS is similar in nature to the management of these resources analyzed in the Monticello RMP/EIS, resulting in potential impacts to recreation resources that are also similar in nature. Management actions associated with other resources and resource uses may result in new impacts to recreational resources and are discussed in this section.

The following assumptions were used for the purposes of analyzing impacts to recreation.

- Based on observed trends and what has been documented for other designated national monuments, the demand for most recreational activities would continue to increase.

- In the Planning Area, resource users may be classified into specific user groups that include OHV, mechanized (e.g., mountain biking), scenic driving, non-mechanized (e.g., hiking, equestrian), and special uses (e.g., rock climbing). Each of these groups has individualized recreation expectations, objectives, settings, opportunities, and needs to achieve satisfying recreational experiences that yield personal, social, economic, and environmental outcomes. However, these groups can also have overlapping expectations, objectives, settings, opportunities, and needs. More detailed descriptions of each of these user groups can be found in Section 4.3.10 of the Monticello Proposed RMP and Final EIS (BLM 2008b). While some of the recreational activities of these user groups are targeted activities in SRMAs (see Appendix G), non-targeted activities are not precluded in the Monument unless specifically prohibited.
- Recreational expectations are assumptions by the recreational user that, having prepared for the desired recreational experience, he or she will have that desired experience (e.g., a challenging or scenic OHV trail, on-road driving while enjoying high-quality scenery, or the natural sights and sounds of an undeveloped landscape along a hiking trail). Recreational user "satisfaction" can be defined as the mental state a user experiences when he or she is able to successfully benefit from the available recreational opportunities and resources and when he or she recognizes that the recreational experiences meet or exceed recreational expectations.

3.11.2.2. DIRECT AND INDIRECT IMPACTS

3.11.2.2.1. Impacts Common to All Alternatives

Under all alternatives, the BLM's Outcomes-Focused Management, including targeted outcomes to enhance personal, community, economic, and environmental goals, would be applied to the BENM. This would have beneficial impacts on all user groups, because all SRMAs, RMZs, and ERMAs would be managed with prescriptions with the goal to meet users' recreational needs and provide satisfying recreational experiences.

Management actions that limit or prohibit surface-disturbing activities for purposes of resource protection (e.g., those management actions that may prohibit certain activities in areas with high use or high visitation) generally maintain or, in some cases, improve the recreation experience and setting. Visitation limitations, while providing the opportunities for solitude or primitive, unconfined recreation, may also limit certain users' abilities to pursue their chosen experience (i.e., satisfaction) during their preferred schedule.

Under all action alternatives, issuing SRPs and SUAs would be a discretionary management decision containing requirements as needed to control visitor use (i.e., reduce or minimize resource use conflicts), help meet management objectives, protect cultural and natural resources, and provide for the health and safety of visitors. These SRP and SUA management decisions, while different in quantities depending upon alternative, support recreation resources and recreation resource users because the SRP and SUA processes would review the proposed commercial activity and include stipulations to ensure that recreational resources would not be adversely impacted and that the resource use would minimize conflicts between other recreational user groups.

Restrictions on resource use would support recreational user groups that seek experiences associated with natural, undeveloped, or pristine environments; remoteness; and solitude (in general, non-mechanized groups) because restrictions would reduce the likelihood of crowding and resource use conflicts and increase the perception of solitude and remoteness, thus increasing the likelihood of satisfying recreational experiences for these groups. Similarly, resource restrictions on commercial permits and group size thresholds for SRPs would support private, non-commercial users for the same reasons as discussed above: less crowding on a biking or hiking route would increase the perception of solitude and remoteness, which would increase the likelihood of a satisfying experience for users who seek these recreational qualities. Conversely, proposed restrictions on resource use may also deny certain users the opportunity to recreate in a given area (e.g., OHV use or camping restrictions).

Areas limited to designated routes for OHV use and allowing for recreational developments would support a wide variety of recreational users because many non-mechanized (e.g., hiking) and OHV riders desire developed campgrounds, easy trail access, and similar developed recreation settings. Developed

recreation settings would also benefit recreational users seeking a more primitive recreation setting by taking pressure off of dispersed camping and hiking trails in more remote areas.

More recreation development, such as campgrounds and directed interpretation, in the Trail of the Ancients RMZ and Indian Creek SRMA would benefit users seeking more-developed recreation experiences and would possibly adversely affect users seeking a less-developed, less-interpreted sense of discovery experience. However, by having more recreation development in certain areas, use would be more concentrated to these areas, preserving a more primitive experience and setting in other areas.

All action alternatives would include more recreation management actions addressing the proper care and management of relevant Monument objects and values such as identifying targeted areas for recreation outcomes described in the Proclamations and focusing recreational use in areas most appropriate for that use to reduce recreational impacts on other Monument objects and values than Alternative A (see Section 2.4.7.2).

Impacts to Soundscapes

All action alternatives would manage the Monument to provide for the proper care and management of natural quiet that enhances recreational experiences. There are also numerous management actions that support natural, undeveloped, non-motorized settings also provide beneficial impacts to soundscapes consistent with the BENM's identified value of natural quiet, as specified in the Proclamation. OHV recreation would be the primary source of noise in the Planning Area. Generally, noise attenuates with distance; for example, OHV noise (about 101 dB) will attenuate to approximately half the noise (approximately 50 dB) with each 0.5 mile away from the noise source (NPS 2013) (see also discussion for potential noise impacts to wildlife). Accordingly, recreational users who are seeking non-motorized settings would experience impacts to natural quiet within 0.5 mile of designated routes (this is likely an overestimate as the analysis assumes no topographic and/or vegetative obstruction, which would attenuate noise more quickly). Alternatives allowing OHV use in larger areas would have greater impacts on soundscapes; however, these impacts would be temporary due to the transitory nature of OHV use. The designation of OHV limited areas under Alternatives A, C, D, and E would continue to allow OHV use on existing designated routes. Alternative B would result in BLM and USFS closure of designated routes located in areas closed to OHV use, reducing potential impacts on soundscapes (Tables REC-2 and REC-4).

Impacts from Cultural Resources Management Actions

Cultural resources management actions would support the Proclamations' identified recreation values for all recreational users seeking opportunities for visitation and interpretation of cultural resources sites. All action alternatives would implement an activity-level cultural resources management plan, a Cultural Resources Monitoring Framework (Appendix D), Cultural Resources Allocation Criteria and Management Strategies (Appendix E), and an American Indian Tribal Collaboration Framework (Appendix F), all of which would help to better address cultural resources-related recreational opportunities in comparison to Alternative A. The protective and preservation prescriptions applied to cultural resources under the action alternatives would preserve opportunities for recreational resource visitation and interpretation. These impacts would continue for the life of the plans.

Impacts from Lands and Realty Management Actions

Management decisions that would potentially impact recreation resources include those proposed to protect identified BENM recreational values during commercial filming projects. Management decisions and stipulations under all action alternatives that require minimum-impact filming criteria would preserve opportunities for recreational resource visitation and interpretation. Because landing and taking off from existing backcountry airstrips on BLM- or USFS-administered lands in the Planning Area would be allowed, such activity could result in adverse impacts to recreational users seeking a more primitive recreation experience with less evidence of human activity and less noise. However, allowing landing and taking off from existing backcountry airstrips would also provide more options for accessing these parts of the Planning Area for recreational users that use these airstrips. Limiting the use of drones/UAVSs in the Planning Area would benefit recreational users seeking a more primitive recreation experience with less evidence of human activity and less noise. However, limitations on drones/UAVSs would also have an adverse impact on recreational users seeking to use drones/UAVSs in the Planning Area for photography

or other activities. The use of drones/UAVSs is limited under all action alternatives, with Alternative B imposing the most limitations. There are no management actions for the use of drones/UAVSs under Alternative A.

All action alternatives would have fewer areas open to ROWs than Alternative A, which would benefit recreational users seeking a more primitive recreational experience. Alternatives B and C would have the fewest areas open to ROWs, while Alternatives D and E would have the most ROW avoidance areas.

Impacts from Livestock Grazing Management Actions

Under all alternatives, site-specific concentrated-use areas and developed recreation sites would be unavailable (BLM)/not suitable (USFS) for livestock grazing to reduce conflict between livestock and recreational uses. Under Alternative B, more areas in the Indian Creek Unit would be made unavailable to grazing than under the other alternatives and this would reduce the potential for conflict with recreational users to a greater degree (see Table LSG-3). Under all action alternatives, more areas would be made unavailable (BLM)/not suitable (USFS) to grazing than Alternative A. Alternative B would have the most area unavailable (BLM)/not suitable (USFS) to grazing, while Alternatives C, D, and E would have similar acreages unavailable (BLM)/not suitable (USFS) to grazing. This would assist in preserving recreational resources for nearly all user groups. Outside of developed recreation sites, livestock presence can be perceived by some users as a disruption to the backcountry experience because of the presence of manure along trails and at campsites, the consumption of wildlife forage (that potentially reduces wildlife viewing opportunities), and evidence of soil compaction and soil erosion. Not all user groups are impacted by livestock; for example, OHV users and/or scenic drivers typically do not have their experience disrupted by the presence of livestock. Managing to meet or make progress toward Utah Rangeland Health Standards and Guidelines or USFS desired conditions for rangelands would reduce potential impacts to all recreational user groups.

Impacts from Management Actions Related to Lands Managed for Wilderness Characteristics

Managing lands to preserve their wilderness characteristics would support recreational values, especially for primitive recreational users, because naturalness, solitude, and outstanding opportunities for primitive recreation would be preserved from closure/restrictions on surface-disturbing activities and other uses. There could be impacts to some user groups because no competitive, OHV, or mountain biking events would be permitted in lands managed for wilderness characteristics. Specialized recreational activities (e.g., rock climbing) that would potentially degrade wilderness values could be restricted or prohibited. Prohibitions on OHV travel in these areas and on specialized activities that could degrade wilderness characteristics would have impacts on OHV, mechanized, and specialized recreational user groups for the life of the plans.

Impacts from Paleontology Management Actions

Prohibiting casual fossil and petrified wood collection under all action alternatives would help maintain the natural recreation setting and would contribute to providing opportunities for educational interpretation and recreational enjoyment of a natural setting to a variety of recreational user groups. The Paleontological Resource Preservation Act (36 CFR 291.12) prohibits casual collection on National Forest System lands in national monuments. Prohibiting casual collection of fossils on BLM-administered and USFS lands within the Monument would help preserve paleontological resources. Under Alternatives B, C, and E, if surveys indicate the presence of significant paleontological resources on trails and access points, the agencies would close or reroute the trails. If closure or rerouting is not possible, the agencies would provide specific information to climbers or hikers on how to avoid or minimize impacts to paleontological resources. Such closures and reroutes may result in limiting certain recreational opportunities to protect paleontological resources, which are identified as Monument objects and values.

Impacts from Riparian Management Actions

Management decisions to protect riparian resources under all alternatives would contribute to maintaining a natural recreation setting by reducing or removing the causes of impacts to riparian recreational resources. These management decisions may not support the desired recreation setting for some OHV user groups (e.g., OHV and dispersed vehicle campers) because recreational opportunities would be reduced.

The restoration of functioning riparian areas would increase the likelihood for a satisfying recreational experience in riparian areas where the recreational expectation includes an available water source, protection from summer heat, absence of livestock, scenic quality, and wildlife viewing.

Impacts from Soil and Water Management Actions

Management actions for soil and water (including healthy vegetation, biological soil crusts, etc.) under all action alternatives, while not specific to recreation, would support a natural recreation setting by managing soil productivity and sedimentation and mitigating soil erosion that could degrade recreation-related scenic quality. This would provide benefits to all user groups. There are no similar soil and water management actions affecting recreation under Alternative A.

Impacts from Special Designations Management Actions

WSAs would be managed consistent with BLM Manual 6330 until Congress makes wilderness designations or releases the WSAs from wilderness review. Management decisions proposed in the MMPs that emphasize the protection of natural, prehistoric, and historic cultural resources within ACECs or WSAs would help maintain these resources for recreational enjoyment and interpretation and would be consistent with the Proclamation's identified recreation values.

The impacts on recreation resources and non-mechanized recreational opportunities of managing WSAs would continue during the life of the plans with opportunities for satisfying hiking, backpacking, equestrian, and dispersed camping experiences within a pristine, undeveloped landscape. Impacts from managing ACECs would include maintenance of non-motorized recreational opportunities in Lavender Mesa ACEC. Shay Canyon ACEC and the portion of the San Juan River ACEC in the Planning Area would continue to provide opportunities for OHV recreational experiences on designated routes.

Impacts from Travel Management Actions

As required by executive order and regulation, the MMPs make area allocation travel management decisions and provide criteria to guide future travel management planning efforts. These decisions include identifying areas that are open, limited, and closed to OHV use. Travel management implementation-level decisions for individual routes within the MMPs are being deferred to subsequent implementation-level travel planning. There are no areas designated as open to OHV use under any alternatives. The alternatives propose allocations of areas that would be either be designated as closed to OHV use or designated as OHV-limited. Designating areas as closed to OHV use would result in the immediate closure of any existing OHV routes in these areas, which would support non-motorized users' opportunities and help maintain a natural recreation setting but would limit OHV users' ability to pursue motorized activities in certain areas. Areas designated as OHV limited areas would support nearly all user groups.

Impacts from Visual Resources Management Actions

Areas managed under VRM Class I (BLM)/SIO Very High (USFS) and VRM II/SIO High resource objectives would have long-term, protection-related, beneficial impacts on recreational resources and all recreational users because recreation-related scenic quality would be preserved or impacted to a minor degree. Areas managed under VRM Class III/SIO Medium and VRM IV/SIO Low resource objectives would have the potential to create adverse impacts on recreational resources and users because fewer areas would be managed for high-level protection of visual and scenic quality and more area would be open for potential surface disturbance–related scenic quality degradation. Management actions for maintaining dark skies would support the desired recreation setting for all recreational user groups. Alternative B would manage the most areas as VRM I/SIO Very High, while Alternatives C and E would manage more areas as VRM I/SIO Very High than Alternative A. All action alternatives would manage more areas as VRM II/SIO High than Alternative A, with Alternatives D and E managing the most areas as VRM II/SIO High. This management would reduce impacts on visual resources and other Monument objects and values compared to Alternative A. For a comparison of alternatives impacts for visual resources, see Section 3.19.

Impacts from Wildlife and Fisheries Management Actions

Wildlife and/or fisheries management decisions under all alternatives that would seasonally close wildlife habitat in the BENM may limit the ability of certain user groups (e.g., OHV users) to pursue preferred

recreational activities in site-specific areas because public OHV use would be prohibited in these areas. Seasonal habitat closures and raptor nest buffers would also limit non-motorized activities such as rock climbing, hiking, and camping, thus resulting in similar limitations on recreational opportunities for these activities.

3.11.2.2.2. Alternatives Impacts

A quantitative comparison of the alternatives' potential impacts to recreation is provided in Tables REC-1 through REC-4. Tables REC-1 and REC-3 summarize the acreages of targeted activities under each alternative for the Shash Jáa and Indian Creek Units. Tables REC-2 and REC-4 summarize the acreages of OHV limited areas and OHV closed areas that are based on the proposed travel allocations. Designated routes within areas designated as OHV limited would be available; designated routes would be closed within areas designated as closed to OHV. This quantitative comparison is followed by a qualitative description of each alternative's potential impacts on the recreational experience.

Table REC-1. SRMA Targeted Activities per Alternative, Shash Jáa Unit

Targeted Activities	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Cultural site visitation, heritage tourism, education and interpretation	118,312 acres Rationale: Cedar Mesa SRMA (BLM) and San Juan River SRMA (BLM); all USFS-administered land	129,980 acres Rationale: Shash Jáa SRMA (BLM) and all USFS-administered land	Same as Alternative D but with additional adaptive management and limitations Rationale: Shash Jáa SRMA (BLM) and all USFS-administered land	129,980 acres Rationale: Shash Jáa SRMA (BLM) and all USFS-administered land	129,980 acres Rationale: Shash Jáa SRMA (BLM) and all USFS-administered land
Hiking	118,312 acres Rationale: Cedar Mesa SRMA (BLM) and San Juan River SRMA (BLM); all USFS-administered land	129,980 acres Rationale: Shash Jáa SRMA (BLM) and all USFS-administered land	Same as Alternative D but with additional adaptive management and limitations Rationale: Shash Jáa SRMA (BLM) excluding Arch Canyon RMZ; all USFS-administered land	124,522 acres Rationale: Shash Jáa SRMA (BLM) excluding Arch Canyon RMZ; all USFS-administered land	124,522 acres Rationale: Shash Jáa SRMA (BLM) excluding Arch Canyon RMZ; all USFS-administered land
Backpacking	117,996 acres Rationale: Cedar Mesa SRMA (BLM), San Juan River SRMA (BLM) excluding Moon House RMZ; all USFS-administered land	99,113 acres Rationale: Shash Jáa SRMA (BLM) excluding Moon House RMZ and Trail of the Ancients RMZ (BLM) (developed campgrounds only); all USFS-administered land	Same as Alternative D but with additional adaptive management and limitations Rationale: Shash Jáa SRMA (BLM) excluding Arch Canyon RMZ and Moon House RMZ; all USFS-administered land	124,206 acres Rationale: Shash Jáa SRMA (BLM) excluding Arch Canyon RMZ and Moon House RMZ; all USFS-administered land	124,206 acres Rationale: Shash Jáa SRMA (BLM) excluding Arch Canyon RMZ and Moon House RMZ; all USFS-administered land
Camping	112,006 acres Rationale: Cedar Mesa SRMA (BLM), San Juan River SRMA (BLM) excluding Moon House RMZ and Mule Canyon WSA; all USFS-administered land	81,480 acres dispersed camping 30,551 acres developed campgrounds only Rationale: Shash Jáa SRMA (BLM) excluding Moon House RMZ, Trail of the Ancients RMZ, and Mule Canyon WSA; all USFS-administered land	Same as Alternative D but with additional adaptive management and limitations Rationale: Shash Jáa SRMA (BLM) excluding Moon House RMZ and Mule Canyon WSA; all USFS-administered land	123,674 acres Rationale: Shash Jáa SRMA (BLM) excluding Moon House RMZ and Mule Canyon WSA; all USFS-administered land	123,674 acres with limitations on dispersed vehicle camping in Shash Jáa Unit (allowed only in previously disturbed areas along designated routes) Rationale: Shash Jáa SRMA (BLM) excluding Moon House RMZ and Mule Canyon WSA; all USFS-administered land
OHV riding	95,115 acres Rationale: Cedar Mesa SRMA (BLM) excluding Moon House RMZ and Mule Canyon WSA; USFS-administered land excluding Arch Canyon and Dark	34,981 acres Rationale: Shash Jáa SRMA (BLM) excluding Moon House, Trail of the Ancients and Arch Canyon RMZs, and Mule Canyon WSA, LWCs; USFS-administered land excluding Arch Canyon	Same as Alternative D but with additional adaptive management and limitations Rationale: Shash Jáa SRMA (BLM) excluding Moon House and Trail of the Ancients RMZs, and Mule Canyon WSA; USFS-administered	79,145 acres Rationale: Shash Jáa SRMA (BLM) excluding Moon House and Trail of the Ancients RMZs, and Mule Canyon WSA; USFS-administered land excluding Arch	79,145 acres Rationale: Shash Jáa SRMA (BLM) excluding Moon House and Trail of the Ancients RMZs, and Mule Canyon WSA; USFS-administered land excluding Arch

Targeted Activities	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	Canyon IRAs, Primitive ROS, and Semi-Primitive Non-Motorized ROS	and Dark Canyon IRAs, Milk Ranch Point OHV closed area, Primitive ROS, and Semi-Primitive Non-Motorized ROS	land excluding Arch Canyon and Dark Canyon IRAs, Primitive ROS, and Semi-Primitive Non-Motorized ROS	Canyon and Dark Canyon IRAs, Primitive ROS, and Semi-Primitive Non-Motorized ROS	Canyon and Dark Canyon IRAs, Primitive ROS, and Semi-Primitive Non-Motorized ROS

Notes: ERMA acres are not included in this table because there are no specific targeted recreation activities or outcomes within ERMAS. Recreation in ERMAs is managed to maintain current recreation settings commensurate with other resources.

Acres of OHV riding indicate areas in which OHV riding is a targeted recreational activity and, therefore, are not equivalent to the more general designations of OHV limited and OHV closed acreages included in Table REC-2.

Table REC-2. Acreages of Existing and Proposed OHV Limited and OHV Closed Areas per Alternative, Shash Jáa Unit

Type of OHV Area	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Limited (acres)	110,107	56,148	Same as Alternative A	Same as Alternative A	Same as Alternative A
Closed (acres)	19,709	73,661	Same as Alternative A	Same as Alternative A	Same as Alternative A

Table REC-3. SRMA Targeted Activities per Alternative, Indian Creek Unit

Targeted Activities	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Rock climbing, hiking, cultural site visitation, heritage tourism, education and interpretation	48,997 acres Rationale: Indian Creek SRMA	Same as Alternative D with additional limitations Rationale: Indian Creek SRMA	Same as Alternative D but with additional adaptive management and limitations Rationale: Indian Creek SRMA	48,997 acres Rationale: Indian Creek SRMA	48,997 acres Rationale: Indian Creek SRMA
Camping	48,997 acres Rationale: Indian Creek SRMA and Monticello ERMA with current closures	0 dispersed camping acre 20 current developed campground acres Rationale: Dispersed camping in ERMA only, SRMA developed campgrounds only	Same as Alternative A but with additional adaptive management and limitations Rationale: Indian Creek SRMA and Monticello ERMA with current closures	Same as Alternative A Rationale: Indian Creek SRMA and Monticello ERMA with current closures	48,997 acres Rationale: Indian Creek SRMA and Monticello ERMA with current closures
OHV riding	43,058 acres Rationale: Indian Creek SRMA excluding Bridger Jack WSA and Lavender Mesa ACEC closures	12,330 acres Rationale: Indian Creek SRMA excluding Bridger Jack WSA, Lavender Mesa ACEC, Upper Davis, Upper Lavender, and LWC closures	Same as Alternative A but with additional adaptive management and limitations Rationale: Indian Creek SRMA excluding Bridger Jack WSA and Lavender Mesa ACEC closures	Same as Alternative A Rationale: Indian Creek SRMA excluding Bridger Jack WSA and Lavender Mesa ACEC closures	43,058 acres Rationale: Indian Creek SRMA excluding Bridger Jack WSA and Lavender Mesa ACEC closures

Notes: ERMA acres are not included in this table because there are no specific targeted recreation activities or outcomes within ERMAS. Recreation in ERMAs is managed to maintain current recreation settings commensurate with other resources.

Acres of OHV riding indicate areas in which OHV riding is a targeted recreational activity and, therefore, are not equivalent to the more general designations of OHV limited and OHV closed acreages included in Table REC-4.

Rationale means those areas that include opportunities for the listed targeted activity.

Table REC-4. Acreages of OHV Limited and Closed Areas per Alternative, Indian Creek Unit

Type of OHV Area	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Limited (acres)	64,636	27,975	Same as Alternative A	Same as Alternative A	Same as Alternative A
Closed (acres)	6,902	43,918	Same as Alternative A	Same as Alternative A	Same as Alternative A

Alternative A: No Action Alternative

Alternative A reflects the current management of the Planning Area under the Monticello RMP and the Manti-La Sal LRMP; it does not include the management actions proposed under Alternatives B, C, and D. Under Alternative A, the Indian Creek SRMA would generally be open to dispersed camping, hiking, rock climbing, OHV riding, horseback riding, cultural site visitation/heritage tourism, target shooting, campfires (except in the Lavender Mesa ACEC), and pets. Although they would not be precluded from Indian Creek SRMA, there may be fewer opportunities for activities such as backpacking, mountain biking, and other non-targeted activities because the area would not be specifically managed for these types of recreation uses.

There would be no SRMAs or RMZs designated for the Indian Creek Unit under Alternative A. Alternative A would provide the most acres open to OHV use.

In the Shash Jáa Unit, while the existing Cedar Mesa SRMA and San Juan River SRMA would have RMZs and management actions in place for dispersed camping, campfires, and pets, there would be no target shooting restrictions; users seeking these experiences would generally be less restricted than under Alternatives B through D. Similarly, the USFS-administered lands in the Shash Jáa Unit would maintain existing ROS classifications in place. Dispersed camping restrictions in Cedar Mesa SRMA and Comb Ridge RMZ would reduce opportunities for backpacking and camping in these areas. Allowing campfires throughout the Shash Jáa and Indian Creek Units where not already prohibited (e.g., interpretive sites) may have indirect impacts on the recreational setting due to the need to gather fuelwood (which could degrade vegetation and thus the natural setting) and the evidence of use, such as fire rings, burned wood, and ash piles. Because Alternative A would have fewer recreational management areas designated than the other alternatives, there would generally be fewer restrictions on OHV users and more routes open to public use.

Alternative A would have the second-fewest acres managed as VRM Class I, after Alternative D, and would be the only alternative with areas managed as VRM Classes III and IV. Areas managed under VRM Classes III and IV would have more potential for changes to the landscape and adverse impacts to existing scenic qualities. Impacts to scenic qualities would diminish the recreational experience of recreational users who visit the Monument because of its scenic resources and desire a more primitive recreational setting. Under Alternative A, both BENM units would maintain existing ROWs; there would be no avoidance or exclusion areas except in circumstances already designated as such. Managing areas as open to ROWs and allowing for ROW development could result in potential effects to the existing recreation setting, such as improvements to developed recreational areas or degradation of more primitive recreational settings.

Recreational user groups under Alternative A would be more likely to have conflicts with other user groups than they would under the other alternatives. Visitor use type and frequency have changed since the 2008 Monticello RMP, and the existing management actions under Alternative A (for BLM and USFS prescriptions) may not fully address the current recreational uses.

Maps 2-22 and 2-23 illustrate the recreation designations proposed under Alternative A.

Alternative B

Qualitatively, the types of impacts from management decisions under Alternative B would be similar to those for Alternatives A, C, D, and E, but the degree of impact would vary among the alternatives. However, in a quantitative comparison to the other alternatives, Alternative B would manage more areas to protect for wilderness characteristics, would close more area to OHV use, and would have more restrictions on recreational visitation, group size, camping, campfires, rock climbing, target shooting, and pets (see Tables 2-8 and 2-9 for more detailed descriptions of proposed management actions). Target shooting would be prohibited under Alternative B. In general, Alternative B would provide for more non-motorized backcountry or primitive recreational experiences, such as hiking and horseback riding, than Alternatives A, C, D, or E. Because of restrictions on dispersed camping, Alternative B would provide fewer opportunities for backpacking and camping than Alternatives A, C, D, or E by requiring climbers, hikers, and other recreational users to camp in designated camping areas only. However, the agencies could choose to designate dispersed camping areas in the future, which would increase backpacking opportunities under this alternative. Alternative B would also provide the fewest opportunities for OHV riding compared to other alternatives. Additionally, Alternative B would provide a recreational setting and experience that would include smaller groups, generally less crowding, and an emphasis on more-regulated access to high-use recreational resources and significant cultural sites. This would generally improve the recreational experience but would decrease the number of individuals that can have that experience over a given time period.

Alternative B would manage more areas as VRM Class I than would any of the other alternatives. Areas managed under the VRM Class I objective would preserve the area's existing scenic quality, which would benefit recreational users who visit the Monument to enjoy its scenic resources and desire a more primitive recreation setting. For a comparison of alternatives regarding visual resource management, see Section 3.19.2 of this EIS.

Alternative B would manage the entire Planning Area as ROW exclusion. Managing areas as ROW exclusion would help maintain the existing recreation setting. For a comparison of the alternatives regarding ROW exclusion and avoidance, see Section 3.7 of this EIS.

Maps 2-23 and 2-24 illustrate the recreation designations proposed under Alternative B.

Alternative C

Alternative C would implement monitoring, limitations, and adaptive management as needed to address resource degradation. Under Alternative C, there would generally be fewer restrictions on recreational visitation, group size, camping, campfires, rock climbing, pets, target shooting, and other activities than Alternative B (see Tables 2-8 and 2-9 for more detailed descriptions of proposed management actions). Alternative C would provide fewer opportunities for hiking than under Alternative B but more opportunities for backpacking than Alternative B because of fewer restrictions on dispersed camping. Alternative C would provide fewer areas for OHV use than under Alternative A, more than under Alternative B, and the same amount as under Alternatives D and E. Compared to the other alternatives, Alternative C would be more adaptable to recreational pressures and would manage recreation dynamically to preserve the sustainability of those resources supporting the recreational experience. That adaptability would likely result in some changing access conditions and/or limitations on permitted recreational activities over the life of the plans. These changes could also result in frustration for some recreational users if popular recreational activities or high-use areas are either intermittently available or closed for extended periods due to resource impacts.

Alternative C would have the second-largest number of acres managed as VRM Class I after Alternative B (see Table VRM-4). Areas managed under the VRM Class I objective would preserve the area's existing scenic quality, which would benefit recreational users who visit the Monument to enjoy its scenic resources and desire a more primitive recreation setting.

Alternative C would manage a majority of the Planning Area as a ROW exclusion area, with the remaining areas managed as ROW avoidance areas. Managing areas as ROW exclusion would help maintain the existing recreation setting because no new ROWs would be allowed in these areas. Managing as ROW avoidance would help maintain the existing recreation setting because any proposed ROWs would have to be consistent with the objects and values of the BENM. If a ROW proposal is not consistent with the recreation values (the existing and desired recreation opportunities, settings, and experiences), it would not be approved (see Section 3.7 of this EIS for details).

Alternative C would manage a smaller amount of inventoried lands with wilderness characteristics in the Planning Area to protect wilderness characteristics than would Alternative B, but more than would Alternative A, D, and E (see Table LWC-2). This would increase opportunities for primitive recreation experiences in those areas and decrease the opportunities for OHV recreation in those areas (see Section 3.8 of this EIS for details). For a quantitative comparison of the amount of inventoried lands with wilderness characteristics that would be managed to protect wilderness characteristics, see Section 3.8 of this EIS.

Maps 2-23 and 2-24 illustrate the recreation designations proposed under Alternative C.

Alternative D

Alternative D would have similar impacts and acreages available to recreational activities as those described under Alternative C, except that under Alternative D there would be less monitoring, fewer limitations, and less adaptive management implemented to address potential resource degradation. Under Alternative D, there would generally be fewer restrictions on recreational visitation, group size, camping, campfires, rock climbing, pets, target shooting, and other activities than under Alternatives B or C, and a level of restrictions very similar to Alternative E (see Tables 2-8 and 2-9 for more detailed descriptions of proposed management actions). Areas limited to designated routes for OHV use under Alternative D would be similar to those under Alternatives A, C, and E and would be larger than areas open under Alternative B. While allowing more areas open to motorized use may diminish the experience of recreational users seeking solitude and a more primitive recreation setting, open roads would also provide all recreational users with greater access to numerous non-mechanized trails in the Shash Jáa Unit and climbing walls in the Indian Creek Unit.

Alternative D would manage fewer areas as VRM Class I than any of the other alternatives, which could result in adverse impacts on the scenic quality of the Planning Area and diminish the recreational experience of recreational users who visit the Monument to enjoy its scenic resources and desire a more primitive recreation setting. However, the Arch Canyon Backcountry RMZ, Doll House RMZ, McLoyd Canyon-Moon House RMZ, South Elks/Bears Ears RMZ, and The Points RMZ of the Shash Jáa SRMA, as well as the semi-primitive non-motorized areas of the USFS-administered lands, would have more restrictions on dispersed camping, no target shooting, and limitations on campfires and pets. These areas would support a recreation setting desired by recreational users seeking solitude and a more primitive recreation experience.

Alternative D would manage more land as open to ROWs than would Alternatives B and C but less than would Alternative A. Managing areas as open to ROWs and allowing for ROW development could result in potential effects on the existing recreational setting, such as improvements to developed recreation areas or degradation of more primitive recreation settings. Alternative D would manage the least amount of land as ROW exclusion compared to the other alternatives and would manage the most amount of land as ROW avoidance compared to the other alternatives. Managing land as ROW avoidance would help maintain the existing recreation setting because any proposed ROWs would have to be consistent with the management of the objects and values of the BENM.

Alternative D would not manage inventoried lands with wilderness characteristics specifically to protect wilderness characteristics. Instead, these lands would be managed for multiple use, which would provide additional opportunities for motorized recreation and could diminish the experience of recreational users who desire a more primitive recreation setting.

The requirement for a paleontological survey for commercial or guided climbing permits would decrease the opportunities for commercial specialized recreation in areas where significant paleontological resources cannot be avoided. However, this requirement would also protect the natural recreation setting.

There would be more management restrictions on recreational resources under Alternative D when compared with Alternative A, but fewer restrictions than under Alternatives B and C. The level of management restrictions under Alternative D would be very similar to Alternative E. In general, Alternatives D and E would provide more opportunities for recreational users to visit and explore the Monument in a less-regulated atmosphere when compared with Alternatives B and C.

Maps 2-23 and 2-24 illustrate the recreation designations proposed under Alternative D.

Alternative E

Alternative E would generally have the same impacts to recreational activities as those described under Alternative D. Under Alternative E, there would be fewer restrictions on recreational visitation, group size, camping, campfires, rock climbing, pets, target shooting, and other activities than under Alternatives B or C. Alternative E would manage the same amount of land limited to designated routes for OHV use and as ROW exclusion and ROW avoidance as Alternative D. Like Alternative D, Alternative E would not manage inventoried lands with wilderness characteristics specifically to protect wilderness characteristics.

Alternative E would manage more acres as VRM Class I than Alternative D but fewer acres than the other alternatives. This could result in adverse impacts on the scenic quality of the Planning Area and diminish the recreational experience of recreational users who visit the Monument to enjoy its scenic resources and desire a more primitive recreation setting. The Arch Canyon Backcountry RMZ, Doll House RMZ, McLoyd Canyon-Moon House RMZ, South Elks/Bears Ears RMZ, and The Points RMZ of the Shash Jáa SRMA, as well as the semi-primitive non-motorized areas of the USFS-administered lands, would have more restrictions on dispersed camping, would not allow target shooting, and would impose limitations on campfires and pets. The proposed management of these areas under Alternative E would support a recreation setting desired by recreational users seeking solitude and a more primitive recreational experience.

Alternative E would close or reroute trails and access points for both casual and permitted use if surveys indicate the presence of significant paleontological resources. If trails and access points cannot be rerouted, the agencies would provide educational information to climbers on best climbing practices to

avoid or minimize impacts to paleontological resources. Alternative E would be somewhat less restrictive to commercial guided climbing than Alternative D.

Differences in the recreation management decisions between Alternative E and Alternative D include Alternative E's management of dispersed vehicle camping and rock climbing, as well as decisions under Alternative E that would result in more restrictive group size limits and SRP group size thresholds for Arch Canyon Backcountry RMZ and Shay Canyon ACEC.

Under Alternative E, dispersed vehicle camping in the Shash Jáa Unit (including when allowed in RMZs) would only be allowed in previously disturbed areas along designated routes. This would be more restrictive than Alternative D, which would allow dispersed vehicle camping anywhere along designated routes. Under Alternative E, dispersed vehicle camping requirements would be similar to Alternative A and would be less restrictive than Alternatives B and C but more restrictive than Alternative D.

Unlike Alternative D, Alternative E would allow climbing on arches and hoodoos in the Shash Jáa SRMA and allow the placement of permanent hardware (bolts). Under Alternative D, climbing would be allowed on arches and hoodoos, but the placement of permanent hardware (bolts) would be prohibited. Allowing placement of permanent hardware (bolts) would increase safety for climbers in the Shash Jáa SRMA.

Alternative E would use the same SRP group size threshold as Alternative C for the Shay Canyon ACEC (35 individuals), which would be a smaller group size threshold than Alternative D (50 individuals). Under Alternative E, group sizes larger than 35 individuals could use Shay Canyon ACEC but would need an SRP or letter of agreement. Thus, this group size threshold would not prohibit recreational access to Shay Canyon ACEC for groups larger than 35 individuals but would be more restrictive than Alternative D. Alternative E would also use the same group size limit as Alternative B for the Arch Canyon Backcountry RMZ (12 individuals). This would differ from Alternative D, which would have no group size limit in the Arch Canyon Backcountry RMZ. This group size limit would prevent recreational access to this RMZ for groups larger than 12 individuals but would benefit the recreational experience of RMZ users seeking solitude and a more primitive recreation setting.

Maps 2-23 and 2-24 illustrate the recreation designations proposed under Alternative E.

3.11.2.3 AREA-SPECIFIC ALTERNATIVE COMPARISON

The range of alternatives includes management for specific geographic locations that share a combination of high recreational visitation and sensitive cultural and natural resources that represent BENM objects and values. This section provides a comparison of alternative management for these locations.

Alternatives A, B, C, D, and E include a range of area-specific recreation decisions affecting activities and actions such as organized events, group sizes, campfire restrictions, dispersed camping restrictions, permitting systems for overnight camping, waste management, pet restrictions, and vending at recreation sites (see Section 2.4.7.2, Table 2-8, and Table 2-9). In general, applying more restrictive decisions would decrease the effects of human activities on water quality, fish and wildlife, vegetation, and other natural and cultural resources. More restrictive decisions would generally be favored by smaller groups seeking a more primitive recreation experience, whereas fewer restrictions would generally be favored by larger groups seeking a more social recreation experience with more options for accessing areas (e.g., OHV use).

Group size limits and SRP group size thresholds are frequently used by the BLM and USFS as a tool to limit the frequency of encounters with other groups in backcountry environments and minimize ecological impacts such as the trampling of vegetation, the displacement of wildlife, and changes in water quality created by soil erosion and human waste. Group size limits and SRP group size thresholds also help reduce potential impacts to paleontological resources and cultural resources. For example, under all alternatives, group sizes and the total number of visitors each day are limited in the McLoyd Canyon-Moon House RMZ. Other areas subject to group size limits or SRP group size thresholds include Indian Creek SRMA and ERMA, Bridger Jack Mesa WSA, Lavender Mesa ACEC, Shay Canyon ACEC, Trail of the Ancients RMZ, Arch Canyon RMZ, Arch Canyon Backcountry RMZ (no group size limits for casual use under Alternative D), Doll House RMZ, San Juan Hill RMZ, Mule Canyon WSA, and Shash Jáa SRMA outside the RMZs. For the Planning Area as a whole and for specific parts of the Planning Area, allowable group sizes would generally be smallest under Alternative B, larger under Alternative C, and largest under Alternatives D and E. Group sizes vary under Alternative A for different parts of the Planning Area and apply to the Shash Jáa SRMA, McLoyd

Canyon-Moon House RMZ, San Juan River SRMA, and Mule Canyon WSA. More detailed descriptions of decisions regarding group sizes in different parts of the Planning Area are included in Tables 2-8 and 2-9.

Decisions regarding camping also vary across the alternatives. Under Alternative B, dispersed camping is allowed only in designated dispersed camping areas in the Indian Creek ERMA, and camping is only allowed in developed campgrounds in the Indian Creek SRMA. Under Alternatives C, D, and E, dispersed camping is allowed but encouraged in designated dispersed sites in the Indian Creek SRMA and ERMA. Limits on dispersed camping vary under Alternative A for different parts of the Planning Area. Limiting dispersed camping to designated areas would reduce potential impacts to a variety of natural resources and cultural resources by preventing increased surface disturbance and the effects of human activities on water quality, fish and wildlife, and other resources. However, limiting dispersed camping would also limit opportunities for recreational users seeking solitude and a more primitive recreational experience by requiring all dispersed campers to use designated areas only. A new campground called Shay Mountain Vista Campground would be constructed in the Indian Creek Unit, and camping fees would be charged if deemed necessary. This would provide more camping opportunities for recreational users seeking more developed campgrounds but would also create surface disturbance and increased human activity that would impact soils, vegetation, and wildlife. Prior to site selection and construction, the impacts of the Shay Mountain Vista Campground would be analyzed in an implementation-level environmental analysis. More detailed descriptions of decisions regarding camping are included in Tables 2-8 and 2-9. More information about how management decisions would affect acreages and areas available for camping is available in Tables REC-1 and REC-3.

Decisions regarding campfires and the collection of woodland products and fuelwood may also minimize ecological impacts. Restrictions on campfires and fuelwood collection may prevent unintentional human-cause wildfire ignitions and damage to living and downed vegetation and deadwood that provide habitat for wildlife. Under Alternative B, campfires would only be allowed in designated campgrounds/sites in the Indian Creek SRMA and ERMA and The Points RMZ, and in designated campgrounds/sites with a fire pan in the San Juan Hill RMZ. Under Alternatives C, D, and E, campfires in the Indian Creek SRMA and ERMA would be restricted to fire rings where fire rings are available and would be subject to Leave-No-Trace standards where rings are not available. No campfires would be allowed in the Lavender Mesa ACEC under Alternatives C, D, and E. Campfires would be prohibited in the Mule Canyon WSA under all alternatives. Under Alternatives C, D, and E, campfires would be allowed in the San Juan Hill RMZ with a fire pan, except no campfires would be allowed in archaeological sites. Under all alternatives, private or commercial collection of woodland products or fuelwood would be prohibited in the McLoyd Canyon-Moon House RMZ and Shay Canyon ACEC. Under all alternatives, private and commercial collection of woodland products would also be prohibited in the Lavender Mesa ACEC, but limited collection of dead wood would be allowed for campfires. More-detailed descriptions of decisions regarding campfires and collection of woodland products and fuelwood are included in Tables 2-8 and 2-9.

Under Alternative A, rock climbing routes in the Indian Creek Unit that are in conflict with cultural resources sites would be closed. Alternative B would be the most restrictive and would not allow climbing on arches or hoodoos in the Shash Jáa SRMA. Hoodoos are small, free-standing rock spires or towers. Alternative C would allow climbing on arches and hoodoos in the Shash Jáa SRMA but would prohibit the use of hardware. Alternative D would allow climbing on arches and hoodoos in the Shash Jáa SRMA but would prohibit the placement of permanent hardware. Alternative E would allow climbing on arches and hoodoos in the Shash Jáa SRMA, as well as allow the placement of permanent hardware (bolts). These restrictions primarily prevent potential impacts on visual resources; some recreational users prefer to view arches and hoodoos without climbers or climbing hardware obstructing the view. Allowing placement of permanent hardware (bolts) would increase safety for climbers in the Shash Jáa SRMA.

All action alternatives would prohibit any new OHV or mechanized trail development on the Comb Ridge formation west of Butler Wash, which would benefit visual resources, soundscapes, and recreational users seeking a more primitive recreational experience. A seasonal closure (March 1 through August 31) of the last 0.5 mile of the route in Arch Canyon to OHV use (for casual and commercial use under Alternative C and for commercial use under Alternatives D and E) would reduce potential impacts to Mexican spotted owl, a federally threatened species. More information about how management decisions would affect acreages and areas available for OHV use is available in Tables REC-1 and REC-3.

Under Alternatives B and E, restrictions on the disposal of human waste and other waste in the Indian Creek SRMA and ERMA and Shash Jáa SRMA would be most restrictive. This would help prevent potential impacts to water quality, as well as potential adverse impacts to wildlife attracted by discarded waste. Under Alternatives C and D restrictions on the disposal of human waste and other waste in the Indian Creek SRMA and ERMA and Shash Jáa SRMA would be less restrictive than Alternatives B and E, but would also include measures meant to protect water quality and other resources. More detailed descriptions of these decisions are included in Tables 2-8 and 2-9.

The prohibition on helicopter and drone access in Lavender Mesa ACEC under Alternative B would benefit visual resources, soundscapes, and recreational users seeking a more primitive recreational experience. Alternative E would prohibit helicopter or drone/UAVS access (landing or taking off) for recreational or commercial use in Lavender Mesa ACEC. All other alternatives would allow helicopter access in Lavender Mesa ACEC for scientific study and heliportable equipment. More detailed descriptions of these decisions are included in Tables 2-8 and 2-9.

Alternative B would be the most restrictive regarding pets in the Planning Area in the Indian Creek SRMA and ERMA and the Shash Jáa SRMA. Alternatives C, D, and E would be less restrictive regarding pets in the Indian Creek SRMA and ERMA and the Shash Jáa SRMA but would prohibit pets in archaeological sites and natural water sources. Alternative A would have similar pet restrictions to Alternatives C, D, and E in the Shash Jáa SRMA but would have no management decisions regarding pets in the Indian Creek SRMA and ERMA; therefore, Alternative A would likely result in greater impacts to other resources than the action alternatives. More restrictions on pets would help prevent potential conflicts with wildlife and other recreational users, prevent potential damage to archaeological sites, and protect water quality, but they would also limit recreational opportunities for people visiting the Planning Area with pets.

In general, Alternative B would include the most restrictive recreation decisions. More-restrictive recreation decisions would result in benefits to recreational users seeking a more primitive recreation experience and fewer adverse impacts to natural resources, cultural resources, visual resources, and soundscapes. However, more-restrictive recreation decisions would also result in potential adverse impacts to recreational users seeking large-group experiences and more options for accessing and experiencing parts of the Planning Area (e.g., OHV use, climbing, helicopters, and drones). While Alternative C would have a similar level of recreation restrictions in its decisions as Alternatives D and E, it would provide more opportunities for monitoring, adaptive management, and the implementation of limitations that the agencies deem necessary to protect Monument objects and values. Management of the Planning Area under Alternatives A, D, and E would generally have fewer restrictions on recreation than under Alternatives B and C (e.g., allowing larger group sizes and fewer restrictions on camping and campfires). As a result, Alternatives A, D, and E would generally benefit those seeking social and large-group experiences more than under Alternatives B and C. However, the less-restrictive recreation decisions under Alternatives A, D, and E would have more potential to result in adverse impacts to natural and cultural resources than the decisions under Alternatives B or C.

3.12. Riparian, Wetland, and Water Resources

Riparian areas, when present, are found at the interface of aquatic and terrestrial habitats and are characterized by distinct hydrological, vegetation, and soil properties and may include wetlands. Riparian areas comprise less than 4% of the Planning Area but provide important human and wildlife values despite their limited spatial extent. Riparian and wetland ecosystem benefits include maintaining clean water; supporting plant and wildlife diversity and productivity, including special status species; stabilizing streambanks and soils; providing habitat structure and heat refuge compared to surrounding uplands; and enhancing groundwater recharge and base flow (BLM 2018c). Riparian and wetland areas also provide cultural and historic values and economic value derived from sustainable uses, recreation, and scenic values. Springs, seeps, tinajas, and their associated riparian habitat and perennial and intermittent stream and riparian corridors are objects of significance in the Planning Area. Opportunities to protect headwaters and water supply, recreation, diversity of habitat for wildlife and native vegetation, and livestock grazing as a tool to restore or maintain watershed health are values related to riparian, wetland, and water resources in the Planning Area.

The BLM and USFS manage riparian areas to maintain ecosystem functions and values and in doing so protect wetlands and other water resources, including stream habitat and surface and groundwater quality and quantity. The BLM qualitatively assesses riparian health through riparian PFC, a measure of riparian resiliency to flood flows (BLM 2018d). Riparian areas in BLM-administered lands in the Planning Area have been catalogued (see Maps RIP-1 and RIP-2) and approximately one-third have been assessed for PFC. Riparian area health is closely correlated to wetland function and water quality. Because riparian areas are managed by the BLM and USFS and because improper livestock grazing, OHV use, ROWs, recreation, and other uses can negatively affect their function and condition, the amount of riparian areas open to various uses is used as an indicator of the effects of management actions on riparian areas, wetlands, and water quality.

The analysis area for potential management effects to riparian areas, wetlands, and water resources is the watersheds (10-digit hydrologic unit code [HUC] areas defined by the USGS) intersected by the Planning Area (Map RIP-3). The analysis area includes each entire watershed and not just the portions of the watersheds that intersect the Planning Area. The analysis area is appropriate as it encompasses the reasonable downstream extent of secondary effects to water quality and quantity that could result from direct effects within the Planning Area. The analysis area for potential management effects to groundwater quality and quantity is the Planning Area because the alternatives are focused on a small number of isolated resources (springs and seeps) within the Planning Area and large-scale groundwater withdrawals or impacts are not anticipated. For this reason, the alternatives are unlikely to affect groundwater quantity or quality on an aquifer scale.

3.12.1. Affected Environment

Important waterbodies in the Planning Area include the San Juan River and several drainages that are mostly ephemeral (flowing after precipitation events) but have sections that are intermittent and in some cases perennial. Intermittent and perennial streams in the Planning Area are shown on Maps RIP-1 and RIP-2. All but two streams in the Planning Area are located within the Shash Jáa Unit. A total of 26 springs have been mapped in the Planning Area, although unmapped springs may also occur. A large majority of these springs (25) are within the Shash Jáa Unit (BLM 2018f). These springs represent a very small portion of the aquatic resources in the Planning Area but are critically important to wildlife and livestock. Section 2.12.2 of the AMS provides a more detailed description of drainages and springs within the Planning Area.

An estimated 6,034 acres (3.6% of the total land area) of riparian and wetland resources are located on BLM-administered lands in the Planning Area, according to riparian mapping completed by the BLM (AMS Section 2.11.2.1), of which 4,141 acres are within the Shash Jáa Unit and 1,893 acres are within the Indian Creek Unit. Section 2.11.2.1 of the AMS also summarizes PFC by drainage for BLM-cataloged riparian areas in the Planning Area. PFC assessments have been completed and compiled in the Planning Area since 1994 (BLM 2005). Of the 47 miles of BLM-administered riparian areas assessed for PFC in the Planning Area, approximately 71% are in PFC, 23% are functioning at risk but improving, 6% are functioning at risk but declining, and no riparian areas are considered nonfunctioning.

Floodplains are not mapped in the Planning Area but are assumed to include and extend 300 feet from mapped riparian areas and perennial and intermittent streams for this analysis. Based on this definition, there are 19,350 acres of floodplains in the Planning Area, of which 13,257 acres are within the Shash Jáa Unit and 6,093 acres are within the Indian Creek Unit.

Invasive species—primarily tamarisk (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), camelthorn (*Alhagi maurorum*), and Russian knapweed (*Acroptilon repens*)—are common in riparian and wetland areas within the Planning Area (BLM 2005). These species—especially Russian olive and tamarisk—are more prevalent in low-elevation riparian areas compared to higher-elevation riparian areas in the Planning Area. These species are detrimental to riparian function by dewatering riparian areas, degrading soil and water quality, reducing streambank stability and floodplain development, dissipating flood flows, and degrading habitat for native plants and wildlife. The BLM actively manages invasive species in the Planning Area to maintain riparian systems and restore areas that are not at PFC.

Riparian areas have not been mapped within lands administered by the USFS or SITLA in the Shash Jáa Unit, although interagency mapping efforts using the Riparian Condition Assessment Tool indicate there

are narrow riparian strips along perennial springs and some intermittent streams, including unmapped riparian areas in the bottoms of Texas and Arch Canyons in USFS-administered land (AMS Section 2.11.2.2.1). There are 37 non-riparian wetlands mapped by the USFWS National Wetlands Inventory in USFS-administered land within the Shash Jáa Unit.

Water quality concerns within the Planning Area include high stream temperatures, low dissolved oxygen, high sediment loads and nutrient concentrations, high salinity, and high fecal coliform bacteria concentrations. Many of these concerns are associated with riparian health and cover, water quantity, and natural conditions. The Planning Area includes waterbodies that are on the List of Impaired Waters of Utah that is submitted to the EPA every 2 years as required by Clean Water Act Section 303(d). These waterbodies include portions of Comb Wash, Cottonwood Wash, the San Juan River, North Cottonwood Creek, and Indian Creek. More information about these impaired waterbodies is included in Section 2.12.2.5 of the AMS.

Groundwater occurs in shallow, unconsolidated alluvial aquifers and deeper confined aquifers in the Planning Area. Alluvial aquifers are important in supporting intermittent and perennial streams, springs, and seeps located in the Planning Area. Water resources in the Shash Jáa Unit support wildlife, grazing, and recreational uses. Potable water supplies for Bluff, Eastland, Monticello, and the San Juan Special Service Districts are derived from springs or wells that are regionally connected to the groundwater resources underlying the Shash Jáa Unit, although no wells are located within the unit. Water resources in the Indian Creek Unit support wildlife, grazing, recreation, and private drinking water uses. Private drinking water is drawn from shallow groundwater aquifers within the Indian Creek Unit. There are no sole-source aquifers or public drinking water protection zones in the Planning Area.

Aquifers that occur within the Planning Area boundaries include the P aquifer, the N aquifer and isolated unconsolidated alluvial aquifers that underlie both the Indian Creek and Shash Jáa Units (see Maps RIP-4 and RIP-5). The N aquifer is a regionally extensive aquifer that provides drinking water to surrounding communities and livestock water via water wells. This aquifer is present along the eastern edge of the Shash Jáa Unit and in the higher elevations of the Indian Creek Unit (Hintze 2000). The P aquifer provides water for very low flow springs and seeps in the lower elevation areas. Located below the N aquifer, this aquifer often has poor water quality with high levels of total dissolved solids (TDS) and salinity. Recharge for the P and N aquifers is mainly from precipitation and infiltration in the higher elevation areas to the north and east of the Shash Jáa and Indian Creek Units. Along the east side of the Shash Jáa Unit there is a small recharge area for the N aquifer where the bedrock is exposed along Comb Ridge. Within the Indian Creek Unit, the N aquifer areas are steeply dissected and are not effective recharge areas. Groundwater movement is from north to south, eventually discharging into the San Juan River (Freethey and Cordy 1991). The isolated, unconsolidated aquifers are narrow bands of alluvium following the larger washes and provide base flows to the perennial and intermittent stream segments.

3.12.2. Environmental Consequences

3.12.2.1. ANALYSIS METHODS

3.12.2.1.1. Assumptions

- Floodplains are not mapped in the Planning Area but are assumed to extend 300 feet from mapped riparian areas and perennial and intermittent streams for this analysis.
- The BLM assumes that over the life of the plan, approximately 3,000 acres of vegetation treatments would be completed in the Shash Jáa Unit and approximately 2,000 acres of treatments would be completed in the Indian Creek Unit on BLM lands. The majority of the vegetation treatments are expected to be removal of invasive Russian olive and tamarisk.
- The agencies identify riparian areas as being adjacent to intermittent and perennial streams, excluding ephemeral streams, seeps, and springs. Areas with functional similarities to riparian areas likely exist along these excluded features but are not included in quantitative analyses.
- Watershed health and water quality are influenced by all activities in the watershed but are generally most directly influenced by floodplain, riparian, and stream conditions. Watershed health is also related to soil quality, as discussed in Section 3.13.

- Surface water use is assumed to be limited to wildlife, livestock, and recreation.
- As demand for land uses known to impact groundwater are low (ROWs) or prohibited (mining [subject to valid existing rights]), the potential for impacts to groundwater quality is also assumed to be low.
- Large-scale groundwater withdrawals are not anticipated.

3.12.2.2. DIRECT AND INDIRECT IMPACTS

3.12.2.2.1. Impacts from Surface-Disturbing Activities

Most direct and indirect impacts to riparian, wetland, and water resources in the Planning Area would result from surface disturbances. Surface disturbances in the Planning Area could include clearing for land development, including roads, other ROWs, and other infrastructure. Surface disturbances could also occur from construction of livestock facilities, improper livestock grazing, OHV travel, and excessive dispersed camping. Vegetation treatments, such as the physical removal of tamarisk in riparian areas, would also result in vegetation disturbance but are described separately because of the potential benefits of these treatments to riparian areas. In general, all action alternatives would result in less potential for surface disturbance affecting riparian areas, wetland, and water resources than Alternative A and include more management actions addressing the proper care and management of related Monument objects and values than Alternative A (see Section 2.4.8.2).

Direct surface disturbances are most likely to cause the highest intensity of impacts to riparian areas in the Planning Area, depending on the size and duration of the disturbance and sensitivity of the riparian area. Riparian sensitivity may be related to unique characteristics of the riparian area, such as plant diversity, intolerance of some plant species to disturbance (Biswas and Mallik 2010), or previous loss of riparian resilience (e.g., PFC functioning at risk). Direct riparian disturbances would be minimized under all alternatives by adhering to stipulations that encourage development to occur outside of riparian areas. Despite these stipulations, disturbances may occur in areas that are improperly grazed, in areas developed for permanent recreation infrastructure, where roads and trails are established, and in new ROW corridors, if approved. Table RIP-1 presents the amount of riparian areas that would be available (BLM)/suitable (USFS) for livestock grazing, open to new ROWs, and within OHV limited areas under each alternative. Under all action alternatives, there would be fewer riparian areas open to new ROWs than under Alternative A. Actions common to all action alternatives would also reduce impacts on riparian resources compared to Alternative A by implementing new management actions to monitor or limit livestock grazing, recreation, OHV use, riparian plant collection, and other resource uses.

Table RIP-1. Riparian Areas Open to New ROWs, Available (BLM)/Suitable (USFS) for Grazing, and within OHV Limited Areas

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Riparian area in OHV limited areas	95%	48%	95%	95%	95%
Riparian area available/suitable for grazing	91%	52%	91%	91%	91%
Riparian area open to new ROWs	43%	0%	0%	19%	19%
Riparian area within ROW avoidance areas	55%	0%	28%	79%	79%

Direct impacts from surface disturbances and increased use may include loss or conversion of riparian/wetland/aquatic habitat, removal of and/or damage to riparian and wetland vegetation, introduction of invasive species, loss of plant diversity, habitat fragmentation, soil compaction, streambank erosion, and stream channel instability. Alternatives that would limit the location of roads and trails, such as avoiding sensitive soils, seeps and springs, floodplains, and closing redundant trails, would reduce negative impacts to riparian, wetland, and stream resources to the degree they are implemented under each alternative. Alternative B would be most protective of riparian areas from direct surface-disturbance impacts and would provide a larger buffer to surface disturbance than would Alternatives A, D, and E. Alternative C does not prescribe specific buffers. Direct riparian impacts would be similar under all alternatives. These impacts would indirectly affect long-term plant diversity, soil moisture, and water temperature.

Riparian, wetland, and water resources are also susceptible to indirect impacts from surface-disturbing activities on adjacent lands, particularly within floodplains, on steep slopes, and/or in sensitive soils.

Possible indirect impacts include the impacts listed above as well as stream channel modification (bank widening and/or channel entrenchment), sedimentation into wetlands and waterbodies, and water quality degradation. These impacts could also affect water quality in the waterbodies in the Planning Area on the List of Impaired Waters of Utah that are discussed in Section 3.12.1 and in more detail in Section 2.12.2.5 of the AMS. Table RIP-2 presents the amount of estimated mapped floodplains that would be open or conditionally open (i.e., ROW avoidance areas) to surface-disturbing uses under each alternative. Under all action alternatives, there would be fewer floodplains open to new ROWs than Alternative A. Actions common to all action alternatives would also reduce impacts on floodplains compared to Alternative A by implementing new management actions to monitor or limit livestock grazing, recreation, OHV use, riparian plant collection, and other resource uses.

Table RIP-2. Floodplains Open to New ROWs, Available (BLM)/Suitable (USFS) for Grazing, and within OHV Limited Areas

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Floodplains* in OHV limited areas	93%	44%	93%	93%	93%
Floodplains available/suitable for grazing	90%	56%	90%	90%	90%
Floodplains open to new ROWs	52%	0%	0%	24%	24%
Floodplains within ROW avoidance areas	42%	0%	25%	70%	70%

* Floodplains are defined for this table as areas within 300 feet of mapped riparian areas and perennial and intermittent streams.

Riparian buffers would be established under all alternatives to protect riparian areas, wetlands, streams, springs, and/or seeps. Determining appropriate riparian buffer widths depends on hydrology, slope and soil characteristics, vegetation, surface roughness, adjacent land use and management, and the nature of recreational use (Johnson and Buffler 2008). Under Alternative C, riparian buffer widths would be established using the method developed by Johnson and Buffler (2008). The effectiveness of this method would depend in part on the management objectives that are applicable to each riparian area assessed and the quality of the information and analysis used to determine buffer size. Alternatives A, B, D, and E prescribe riparian buffers of various sizes. Wider buffers with more restrictive uses within the buffer would generally be more protective of riparian, wetland, and water resources. Based on uncertainties related to implementation and the lack of floodplain information, Alternative C would likely be least effective at avoiding potential indirect impacts to riparian, wetland, and water resources on a planning scale.

Riparian areas with existing unpaved vehicle routes that would remain partially open or open (e.g., Arch Canyon under Alternatives A, C, D, and E) could see impacts from vehicle use. Impacts may include localized loss or conversion of riparian/wetland/aquatic habitat, removal of and/or damage to riparian and wetland vegetation, introduction of invasive species, loss of plant diversity, habitat fragmentation, soil compaction, streambank erosion, and stream channel instability.

Due to the range of potential open areas under the management alternatives and the duration, extent, and nature of potential impacts, livestock grazing is likely a management concern for riparian and wetland areas and water quality. Riparian impacts from improper grazing include removal of and/or damage to riparian and wetland vegetation, the introduction of invasive species, soil compaction, erosion and sedimentation, decreased water quality, and changes to stream morphology and habitat (Kaufman and Krueger 1984). Riparian areas available (BLM)/not suitable (USFS) for grazing would be monitored and managed under all alternatives to achieve the BLM's PFC goals and to meet or make progress toward Utah Rangeland Health Standards (BLM 1997) or USFS desired conditions for rangelands. Implementation of monitoring and adaptation of grazing management as needed to address impacts would allow riparian recovery and long-term sustainability. Alternative B would the most protective of riparian areas with respect to impacts from grazing; it would have less area available (BLM)/suitable (USFS) to grazing than Alternatives A, C, D, and E (see Tables RIP-1 and RIP-2). Proper livestock grazing practices (e.g., appropriate seasons of use, rest rotation, and placement of water and nutritional supplements) along with implementation of the proposed riparian management actions, can be consistent with meeting soil, riparian, and water objectives; therefore meeting rangeland health standards and PFC in riparian habitats (Porath et al. 2002; Sovell et al. 2000).

Excessive dispersed camping may result in impacts similar to those from grazing but are generally less intense (Eubanks 2004). Alternatives A, C, D, and E would allow similar recreational and camping access in riparian areas. Alternative B would allow less access and would have fewer impacts on riparian areas.

Following the closure and restoration of impacted riparian areas, it can take a minimum of 2 years for the reestablishment of roots to stabilize streambanks and 5 years to establish native vegetation (Eubanks 2004). Eubanks (2004) states that riparian areas can take 10 years or longer to recover following closure and restoration at camping areas, with the length of recovery time dependent on climate, soil conditions, and inherent resiliency.

Riparian areas are sought out for dispersed recreation and camping for the shade and cooler environment that they offer. Management actions common to all action alternatives for dispersed recreation management and dispersed camping within riparian areas would discourage these activities if it is determined they are the reason the riparian area is functioning at risk. By discouraging dispersed camping and other dispersed recreational activities, the riparian resources would have the opportunity to recover and reach a higher proper function. For recreational users, this would move dispersed camping and other activities to less desirable areas that may offer less shade and may be warmer.

For travel system management, Alternatives B, C, D, and E incorporate all elements of Alternative A, with a range of additional resources to be protected during implementation-level planning. Alternative A allows for the location of new roads and trails outside of riparian areas unless alternative routes have been reviewed and rejected. Alternative A does not allow the construction of trails parallel to streams. Under implementation-level travel planning, Alternative B adds that redundant routes and social hiking trails would be closed and reclaimed within 100 feet of seeps and springs, riparian areas, floodplains, and in areas with high concentrations of biological soil crusts or sensitive soils. Alternative B is the most restrictive alternative because it presents a wider range of water and soil resources that it protects. Closure of redundant routes and trails would decrease sedimentation into water resources and allow soils to recover and stabilize through revegetation but would not be anticipated to reduce trail use opportunities.

During implementation-level travel planning, Alternative C would designate routes, including hiking and equestrian trails, to avoid sensitive water and soil resources (seeps, springs, and sensitive soils) where monitoring has shown degradation from recreational activities. This alternative would provide protection of sensitive water and soil resources by using monitoring to assess degradation from recreational activities and as a tool for designation of the route.

Alternative D is generally the same as Alternative C, except that the designation or non-designation of a route or hiking or equestrian trail would not be based on areas where monitoring has shown degradation. Routes and trails would be designated to avoid sensitive water and soil resources including seeps, springs, and sensitive soils. Alternative D would protect sensitive water and soil resources by designating routes that avoid sensitive water and soil resources. By avoiding these resources, sedimentation into water resources and soil disturbance of sensitive soils would be minimized.

Alternative E would locate new roads and trails outside riparian areas unless alternative routes have been reviewed and rejected. This would protect riparian areas from surface disturbance and sedimentation. If roads or trails must be located in riparian areas, Alternative E would protect riparian resources by avoiding paralleling streams unless absolutely necessary. This avoidance would reduce surface disturbance and the subsequent sediment loading. Alternative E would also protect riparian resources by locating stream crossings where the bank is low, the surfaces are firm, and riparian and aquatic ecosystems would be best complemented. Like Alternative C, Alternative E would designate routes, including hiking and equestrian trails, to avoid sensitive water and soil resources (seeps, springs, and sensitive soils) where monitoring has shown degradation from recreational activities.

3.12.2.2.2. Impacts from Invasive Species Management

Invasive species management, which could also result in vegetation disturbance depending on treatment methodology, is likely to have a net beneficial effect on riparian areas but could result in direct degradation of riparian resources if implemented without adequate and concurrent riparian restoration (Mosher and Bateman 2016). Removal of invasive plants without adequate and concurrent restoration can result in severe erosion and soil loss, impacts to stream morphology, loss of habitat, and reduced water quality and

quantity. Alternatives that result in more vegetation disturbance in riparian areas, such as mechanical removal of tamarisk that is available as a treatment method under Alternatives A, C, D, and E, are more likely to result in greater short- and long-term impacts to riparian health compared to methods such as biological and chemical treatment and burning if the treatments and concurrent restoration activities are applied insufficiently (New Mexico Department of Game and Fish 2017).

3.12.2.2.3. Impacts from Water Use

Surface water use (subject to existing water rights) in the Planning Area would be limited to use by wildlife, livestock, and Monument visitors and is not likely to substantially impact water quantity, although intense uses (e.g., concentrated grazing) could impact water availability under drought conditions.

Groundwater withdrawals and new wells are permitted by the State of Utah; however, surface uses associated with these activities are required to be authorized by the BLM and USFS prior to the diversion, conveyance, and use of water through or on BLM- and USFS-administered lands. Groundwater development in alluvial aquifers, typically found close to the surface in valleys and along streams where intermittent and perennial streams within the Planning Area are located (Utah Division of Water Resources 2000), could impact stream flows, springs, or seeps. Future groundwater developments within the Planning Area are assumed to be minor; therefore, impacts to riparian and wetland areas and streams would be minimal.

Development of groundwater from confined aquifers underlying the Planning Area is unlikely to affect springs and seeps, although impacts would be locally severe due to the sensitive nature of these aquatic systems should those impacts occur. Impacts to springs and seeps could be avoided by appropriately locating groundwater wells, which would require an understanding of the groundwater hydrology influencing the springs. Generally, locating groundwater wells farther from springs and seeps would reduce the risk of impacts to springs from groundwater development. Alternative B would be most protective of springs and seeps because all groundwater withdrawals would require a hydrologic study to avoid impacts, followed by Alternative D, Alternative E, Alternative C, and Alternative A.

Potential riparian, wetland, and surface water resource impacts in the Planning Area would generally be limited to the area immediately adjacent to the impact, although water quality and quantity impacts could extend to the boundaries of the analysis area for surface water. Impacts to alluvial groundwater resources would be limited to the subbasin areas for surface water. Impacts to groundwater quality and/or quantity are not anticipated, as no large-scale groundwater withdrawals are anticipated and demand for land uses within the Planning Area that could potentially impact groundwater quality and/or quantity would be very low; no mineral exploration or development would occur except on valid existing mining claims (Section 1.5), livestock grazing would be managed to achieve rangeland standards and closed in sensitive riparian areas (Section 3.9), and new ROWs would be minimal (Section 3.7). Water uses outside of the Planning Area, such as municipal water supplies that draw from aquifers included in the analysis area for groundwater, are unlikely to be impacted by management actions in the Planning Area.

3.13. Soil Resources

The agencies administer activities within the Planning Area to protect soil resources and maintain ecosystem functions and values. Stable and productive soils provide the foundation for other resources and resource use.

To analyze and disclose the potential effects of the alternatives on soil resources, acres of sensitive soils (soils with a high erosion hazard) opened and closed to potential surface-disturbing activities are used as the impact indicators.

The analysis area for soils includes the entire Planning Area, including the watersheds of the Indian Creek and Shash Jáa Units (see Map RIP-3). The Shash Jáa Unit drains portions of Comb Wash (HUC 10: 1403000508), Butler Wash, and their tributaries into the San Juan River. One tract of the Shash Jáa Unit (160 acres) drains to Woodenshoe Canyon and Dark Canyon and into the Colorado River. The Indian Creek Unit drains from Indian Creek (HUC 10: 1408020107) and its tributaries into the Colorado River. All watersheds in this area eventually flow to the Colorado River.

3.13.1. Affected Environment

3.13.1.1. SOIL DATA

The BLM-administered lands within the Shash Jáa Unit were included in the *Soil Survey of San Juan County, Utah, Central Part* (Hansen and Fish 1993). The BLM-administered lands in the Indian Creek Unit are included in the *Soil Survey of Canyonlands Area, Utah, Parts of Grand and San Juan Counties* (Lammers 1991).

In considering the erosion hazard of soils, their susceptibility to erosion by water (Kw) in combination with slope were analyzed using data from the Digital General Soil Map of the United States (STATSGO). Water erodibility indicates soil detachment by runoff and raindrop impact. Some of the most important soil properties that influence rainfall erosion are texture, organic matter content, and structure size class (NRCS 2016). Higher Kw factors indicate relative ease of water erosion of the soil, and steeper slopes generally increase erodibility risk. Erodibility ratings were determined using the draft *Inherent Risk of Site Degradation* parameters developed by the BLM's National Science and Technology Center (BLM 2008a) and presented in Table SOI-1 and Maps SOI-1 and SOI-2. Soils with a high erodibility rating are particularly susceptible to degradation in soil health following surface disturbance.

Table SOI-1. Areas of Surveyed Soil in the Planning Area and Erodibility Rating

Erodibility Rating	Parameters	Area (acres)
High	Kw >.37 & slope > 10% or Kw = 0.20-0.36 & slope >30%	31,632
Moderate	Kw = 0.20-0.36 & slope 10-30% or Kw <0.20 & slope >30%	31,294
Low	Kw <.20 & slope = 10-30% or slope <10%	138,566
Data not available	N/A	27,292

Sources: STATSGO, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (2006) and AMS Section 2.12

As described in the *Soil Survey of San Juan County, Utah, Central Part*, soils in the Shash Jáa Unit are formed in eolian material, alluvium, residuum, and colluvium derived dominantly from sandstone and shale. These soils range from very shallow to very deep (Hansen and Fish 1993). The majority of soils within the BLM portion of the Shash Jáa Unit have a low erodibility rating (see Table SOI-1 and Map SOI-1). A portion of the Shash Jáa Unit has a moderate erodibility rating. In the USFS-administered portion of the Shash Jáa Unit, sandstone is the major rock type from which the soils have formed; soil texture may range from loamy sand to clay; soil depths are shallow to moderately deep; and soils are somewhat vulnerable to erosion. Most soils lie on steep slopes and have a moderate erodibility rating, although a small portion of the soils lie on steep slopes and have a high erodibility rating (BLM 2018a). The USFS lands in the Shash Jáa Unit were included in the UT645 Monticello District Manuscript, 1993.

The soils of the Indian Creek Unit (as described by the *Soil Survey of Canyonlands Area, Utah, Parts of Grand and San Juan Counties* [Lammers 1991]) are more varied than those of the Shash Jáa Unit. These soils appear to be mostly stable based on STATSGO data available for the Indian Creek Unit. Most soils in the Indian Creek Unit have a low erodibility rating (Map SOI-2; see Table SOI-1) as they lie on very gentle slopes. A small portion of the Indian Creek Unit has a moderate to high erodibility rating due to high slopes.

Additional information about the soil units and acreages of the Shash Jáa and Indian Creek Units is in Section 2.12 of the AMS.

3.13.1.1.1. Biological Soil Crusts

Many of the biotic communities found in the Planning Area have evolved with the presence of biological soil crusts. Biological soil crusts include mats or filaments of cyanobacteria, lichens, and mosses. These crusts play a major role in reducing water and wind erosion and preventing the establishment of invasive annual grasses (Belnap et al. 2001). Additional information regarding biological soil crusts in the Planning Area may be found in Section 2.12 of the AMS. No soil surveys for biological soil crusts have been done in the Planning Area. However, soil crusts have been found throughout the Planning Area, and for purposes of analysis, it can be assumed that the entire Planning Area is likely to support some type or amount of biological soil crusts.

Additional information about biological soil crusts in the Planning Area is in Section 2.12 of the AMS.

3.13.2. Environmental Consequences

3.13.2.1. ANALYSIS METHODS

Management actions associated with the following activities would be anticipated to have the greatest impacts on soil resources and are discussed in detail below: riding OHVs, gathering wood, recreation (camping, hiking, rock climbing, and mountain biking), grazing livestock, and vegetation treatments.

The following assumptions were used for the analysis of management action impacts on soil resources:

- Disturbance of the soil surface (from the various activities mentioned above) may result in erosion, soil compaction, and a general decrease in soil productivity.
- The amount of sediment from upland soil erosion that is transported to streams and other waterbodies depends on the distance to the waterbody, slope, soil texture, the filtering capacity of upland and riparian vegetation, storm intensity, duration, and runoff generated.
- Disturbance on steeper slopes is more likely to result in the erosion of soils.
- The removal of vegetation and/or biological soil crusts increases soil susceptibility to wind and water erosion.
- When all other factors are held constant, the degree to which soils are impacted is proportional to the size of the area disturbed.

3.13.2.2. DIRECT AND INDIRECT IMPACTS

There would be adverse impacts to soils within the Planning Area from management changes that would result in the opening of areas containing sensitive soils to surface-disturbing activities. Any management decisions that would restrict surface-disturbing activities in portions of the Planning Area would provide a benefit to soil resources. Indirect effects from the alternatives could occur where hydrologic connectivity may transport sediment outside of the Planning Area boundaries; however, as the location and size of future surface-disturbing activities cannot be anticipated and would be analyzed under a separate NEPA process, effects from these future actions are not quantified within the Planning Area. Under Alternative A, the existing management strategy would continue to be implemented. Numerous management actions would remain in place that help to avoid impacts to soil resources in portions of the Planning Area where surface-disturbing activities are permitted. Each action alternative would involve additional management actions that may impact or protect soil resources within the Planning Area. In general, all action alternatives would result in less potential for surface disturbance affecting soil resources and include more soil management actions that would reduce impacts and provide for the proper care and management of related Monument objects and values than Alternative A (see Section 2.4.9.2).

3.13.2.2.1. Impacts from Recreation Management Actions

Recreational activities can cause soil impacts such as compaction through trampling, particularly with dispersed camping and cross-country hiking. The use of trails can result in trail widening and deepening, with subsequent disturbance to larger soil areas. However, that disturbance is localized and typically would not result in additional disturbance of undisturbed vegetated soils. After Alternative A, Alternatives D and E would allow the most areas to be open to dispersed recreational activities, with increased risk to soils. Alternative B would restrict recreational opportunities to designated areas, including camping areas and designated routes. Alternative C would follow an adaptive approach, where management would be less restrictive until impacts are identified, at which point management would become more restrictive. Alternative B presents the least risk of soil impacts. Alternative C would provide the opportunity to address soil impacts when they are observed, which would prevent continued soil degradation but would result in some impact before remedial action is taken. Protection of soil resources under Alternative C would also be subject to funding availability for monitoring soil conditions in areas of recreational use.

Alternatives B, C, D, and E include a range of soil-related decisions related to travel planning for off-trail hiking in sensitive water and soil areas and a range of planning decisions related to route and trail designation. These decisions would have impacts similar to the types of impacts described from other planning-level decisions, including soil erosion, compaction, or loss.

Alternative B would prohibit hiking in sensitive areas that have highly wind and water erodible soils, areas with a high potential of encountering significant cultural or paleontological resources, and areas that

support habitats for threatened, endangered, or BLM and USFS sensitive species. This is the most protective alternative because it specifies which resources would be protected. The impacts of off-trail use would be reduced by prohibiting off-trail hiking.

Alternatives C and E would initially monitor for hiking-related degradation of sensitive resources. If degradation of sensitive soil resources in areas with designated trails is observed or documented through monitoring, hikers would be encouraged to stay on the trails and leave no trace through placement of signs or barriers. If impacts from off-trail hiking continue, off-trail hiking would be prohibited. Under Alternatives C and E, some impacts from off-trail hiking to sensitive resources would continue, and through time could decrease due to signage and barriers.

Alternative D would encourage Leave-No-Trace off-trail hiking practices. Alternative D does not require monitoring, and Leave-No-Trace hiking practices could take time for some hikers to understand and implement. Impacts from off-trail hiking would continue to some degree but would lessen as hikers become more educated about and adept at Leave-No-Trace practices.

For soil resources decisions related to route and trail designation, Alternatives B, C, D, and E present a range of alternatives similar to those presented under decisions for Riparian Areas. Under Alternative B redundant routes and social hiking trails would be closed and reclaimed within 100 feet of seeps and springs, riparian areas, floodplains, and areas of high concentrations of biological soil crusts or in sensitive soils. These resources would receive more protection than under Alternative C because closure of redundant routes and trials would decrease sedimentation into water resources and allow soils to recover and stabilize through revegetation.

Alternative C calls for the monitoring of roads, equestrian routes, mechanized routes, hiking trails and/or natural variability in season cycles. This alternative includes a list of items that would be included in the monitoring, states that adaptive management would be implemented to address the degradation, lists management methods that could be used to stabilize routes. If route stabilization (e.g., hardening the travel surface) is not effective, temporary closure or active reclamation would be done. This alternative provides protection of sensitive water and soil resources by using monitoring to assess and mitigate degradation from recreational activities.

Alternatives D and E would avoid locating new hiking or equestrian trails and would reduce duplicate trails within 100 meters (approximately 330 feet) of water sources and sensitive soils, including steep slopes and sensitive soils whenever possible and practical to minimize impacts. Alternatives D and E would protect sensitive water and soil resources by designating new routes that would avoid these resources. These trails would be farther from these resources than under Alternative B, and sedimentation into water resources and soil disturbance of sensitive soils would be minimized to a greater degree than under Alternative B or C. Closing redundant routes within 100 meters (328 feet) of these resources would reduce sedimentation and allow soils to stabilize through reclamation and revegetation.

3.13.2.2.2. Impacts from Off-Highway Vehicles

OHV opportunities exist throughout the Indian Creek and Shash Jáa Units. OHV use can lead to disturbance of soils and erosion of soils due to the weight of OHVs and the speed at which they travel. The areas that would be designated as OHV closed or OHV limited for each alternative are listed in Table SOI-2. Alternatives A, C, D, and E would allow the largest OHV limited areas. OHV use in the limited areas would be anticipated to be on designated routes and would not create additional disturbance to pristine soils but would prevent those existing routes from revegetating. Alternative B would have the largest OHV closed areas in sensitive soils, which would result in less potential to disturb sensitive soils from OHV use than the other alternatives. All action alternatives would reduce impacts on soil resources from OHV use because additional roads or trails designated for OHV use as part of implementation-level travel planning must be for the purpose of public safety or protection of Monument objects and values, and because if impact on natural resources, including soil resources are observed at unacceptable levels, the agencies would impose implementation-level limitations including route designation, route closure, motorized vehicle size and weight limitations, or other mitigation measures as necessary to reduce or remove those impacts.

3.13.2.2.3. Impacts from Livestock Grazing Management Actions

Impacts to soils from improper livestock grazing activities may include a loss of vegetation and increased soil compaction from livestock, as well as disturbance from construction of rangeland improvements. These potential impacts within the Planning Area would be mitigated by management of livestock grazing to meet or make progress toward BLM Utah Rangeland Health Standards or USFS desired conditions for rangelands. However, the potential for impacts could still exist in areas of concentrated livestock, such as around water sources and salt licks and along fences. Depending on the density of livestock grazing, impacts may be moderate and could be long term for soil crusts. Areas with sensitive soils available (BLM)/suitable (USFS) and unavailable (BLM)/not suitable (USFS) for livestock grazing in each alternative are quantified in Table SOI-2. Alternatives C, D, and E would make more areas with sensitive soils available (BLM)/suitable (USFS) for livestock grazing than Alternative B; however, Alternatives C, D, and E would make less areas with sensitive soils available (BLM)/suitable (USFS) for livestock grazing than Alternative A.

3.13.2.2.4. Impacts from Vegetation Management Actions

Management of vegetation within the Planning Area would involve various types of vegetation treatments (e.g., treatment of invasive and noxious plants, prescribed burns, upland watershed enhancements, etc.) to promote the establishment and growth of native flora. Although these vegetation treatments typically would not directly disturb soil structure and stratification, indirect impacts to soil stability would occur due to temporary loss of vegetative cover. This, in turn, could cause short-term destabilization of soils and an increase in their erodibility rating. Although the effects of these impacts may continue for approximately 2 to 5 years, as new vegetation becomes established in the long-term soils would be expected to stabilize and provide for the establishment of native vegetation. Prescribed burns would cause short-term impacts to soils; however, in the long term (after 2–5 years), prescribed burns would likely result in an increase in soil nutrient content and the promotion of healthy soils, allowing for the establishment of a native perennial understory and a reduction in invasive grasses. The impacts to biological soil crusts may be more severe, because hot ground fires often kill crustal organisms, which results in slower recovery of the surface crust (AMS Section 2.12). The management actions for vegetation treatments are similar for all alternatives. Therefore, the magnitude of impacts on soils from vegetation management actions is not anticipated to vary measurably across the alternatives.

3.13.2.2.5. Impacts from Rights-of-Way

Management of ROWs is done to minimize the disturbance of protected areas within the Planning Area. ROWs may be granted for maintenance or the improvement of existing roads consistent with the proper care and management of Monument objects and values. WSAs and Wilderness Areas would be exclusion areas for any ROWs. The various alternatives include varying management of ROWs within the Planning Area. The areas opened and closed to ROWs are presented in Table SOI-2. Alternatives A, D, and E would allow for a larger proportion of areas with sensitive soils to be available for ROWs.

3.13.2.2.6. Impacts from Woodland Harvest Management Actions

While the agencies manage the Planning Area to maintain healthy resilient forests, they provide opportunities for woodland harvest for various uses. Some examples of woodland harvest activities include gathering firewood and pinyon pine nuts. Access to support permitted woodland product harvest would be allowed off the designated routes through woodland harvest areas in Alternatives A, C, D, and E. Alternative B would limit harvest activities to designated routes. The areas opened and closed to woodland harvest are presented in Table SOI-2. Alternative A would allow for the largest area to be open to woodland harvest, followed by Alternative E, and then Alternatives C and D, respectively. Alternative B would allow for the smallest area to be open to woodland harvest.

Table SOI-2. Sensitive Soils and OHV, Rights-of-Way, Woodland Harvest, and Livestock Grazing Designations

Soil Erodibility Rating	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Areas Open (acres)	Areas Closed (acres)	Areas Open (acres)	Areas Closed (acres)	Areas Open (acres)	Areas Closed (acres)	Areas Open (acres)	Areas Closed (acres)	Areas Open (acres)	Areas Closed (acres)
OHV Use (limited or closed)										
High	25,350 (80%)	2,342 (7%)	11,393 (36%)	16,324 (52%)	25,350 (80%)	2,342 (7%)	25,350 (80%)	2,342 (7%)	25,350 (80%)	2,342 (7%)
Rights-of-Way										
High	27,369 (87%)	369 (<1%)	0	27,738 (88%)	3,154 (10%)	24,564 (78%)	27,347 (86%)	369 (<1%)	27,347 (86%)	369 (<1%)
Woodland Harvest										
High	15,321 (48%)	12,396 (39%)	9,016 (29%)	18,701 (59%)	12,893 (41%)	14,824 (47%)	12,893 (41%)	14,824 (47%)	15,321 (48%)	12,396 (39%)
Livestock Grazing	**Areas Available /Suitable (acres)**	**Areas Unavailable /Not Suitable (acres)**	**Areas Available/ Suitable (acres)**	**Areas Unavailable /Not Suitable (acres)**	**Areas Available/ Suitable (acres)**	**Areas Unavailable /Not Suitable (acres)**	**Areas Available/ Suitable (acres)**	**Areas Unavailable /Not Suitable (acres)**	**Areas Available/ Suitable (acres)**	**Areas Unavailable /Not Suitable (acres)**
High	25,783 (82%)	1,934 (6%)	11,310 (36%)	16,417 (52%)	25,510 (81%)	2,207 (7%)	25,510 (81%)	2,207 (7%)	25,510 (81%)	2,207 (7%)

Note: The values in parentheses are the percentages of the sensitive soils in the Planning Area open or closed to potential surface-disturbing activities. Not all sensitive soils are present within the boundaries of the proposed management actions and therefore percentages may not sum to 100%.

3.14. Special Designations

ACECs are defined in FLPMA Section 103(a) as "areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." ACECs are only designated on BLM-administered lands.

There is no single set of prescriptions for management of ACECs. Special management is designed specifically to protect the relevant and important values associated with each ACEC, and therefore varies from area to area. As described in the BLM's ACEC manual, "to be designated as an ACEC, an area must require special management attention to protect the important and relevant values" (BLM Manual 1613.12). Special management attention refers to management that "would not be prescribed in the absence of the designation" (BLM Manual 1613.12). To be considered for this special management in a planning effort, a nominated ACEC must meet at least one of the criteria for both relevance and importance.

When the Draft MMPs/EIS was published, the BLM received two specific ACEC nominations within the scope of the planning effort: Bears Ears ACEC and Indian Creek ACEC. These ACEC nominations encompass all lands within the Shash Jáa and Indian Creek Units respectively; an area comprising the entire MMPs/EIS Planning Area. The BLM reviewed the nominated relevant and important values, resources, or systems/processes (collectively "values"), and determined that those portions of the nominated ACECs that met both relevant and importance criteria are identical to the geographic location and corresponding relevant and important values already managed for by the existing San Juan River, Lavender Mesa, and Shay Canyon ACECs. The BLM retained the existing ACECs to maintain continuity of management for those relevant and important values. The BLM did not retain the portion of the nominated ACECs outside of the existing ACECs for analysis because those areas do not meet both the relevance and importance criteria.

Inventoried Roadless Areas (IRAs) are parcels managed by the USFS that were delineated during the 1977 Nationwide Roadless Area Review and Evaluation (RARE II) (USFS 1979) to identify roadless and undeveloped areas suitable for inclusion in the National Wilderness Preservation System within the National Forest System.

The analysis area for the IRAs are the boundaries of the Arch Canyon IRA and the small portion of the Dark Canyon IRA within the BENM.

3.14.1. Affected Environment

Table SD-1 lists the ACECs in the Planning Area. For a complete description of the ACECs' relevant and important values, see Section 2.13 of the AMS. The BLM determined that protecting the relevant and important values of these ACECs continues to require special management that is specific to these ACEC areas. Additionally, as stated above, these ACECs manage for the same relevant and important values identified within ACECs proposed by the public (see Section 3.14). Accordingly, the existing management of these ACECs as provided for under the 2008 Monticello RMP is carried forward under all alternatives.

Table SD-1. Areas of Critical Environmental Concern Acreage and Relevant and Important Values

ACEC	Acreage	Relevant and Important Values
Shash Jáa Unit		
San Juan River	4,321	Scenic, cultural, fish and wildlife, natural systems and processes, and geologic features
Indian Creek		
Lavender Mesa	649	Relict vegetation
Shay Canyon	119	Cultural and paleontological resources

3.14.1.1. SAN JUAN RIVER AREA OF CRITICAL ENVIRONMENTAL CONCERN

The San Juan River ACEC is located along the San Juan River from west of Bluff, Utah, to Mexican Hat, Utah. Approximately 4 miles of the San Juan River and 833 acres of the San Juan River ACEC are within the Shash Jáa Unit (Map ACEC-1) and 4,420 acres of this ACEC fall outside the Shash Jáa Unit. A portion of the ACEC within the Planning Area is also within the San Juan River SRMA. Monument objects present include rock writings and other cultural sites; water sources, including perennial streams; riparian habitat and corridors; and special status plants and fish and their habitat. Relevant and important values that are also identified as Monument objects are afforded protection under the Antiquities Act (see Appendix A).

3.14.1.2. LAVENDER MESA AREA OF CRITICAL ENVIRONMENTAL CONCERN

Lavender Mesa ACEC covers the top of Lavender Mesa located in the Indian Creek corridor of the Indian Creek Unit (Map ACEC-2). This ACEC is entirely within the boundary of the Indian Creek Unit. Lavender Mesa is isolated and inaccessible to humans and herbivores by ground routes; even small mammals such as rabbits and mice appear to be absent. The mesa top supports a relict plant community environment, which serves as an important baseline in comparative vegetation studies. Lavender Mesa and its relict plant community are specifically identified in Proclamation 9681 as a Monument object. Further, Lavender Mesa is part of the geologic features and formations present within Indian Creek Canyon, which is a Monument object. Relevant and important values that are also identified as Monument objects are afforded protection under the Antiquities Act (see Appendix A).

3.14.1.3. SHAY CANYON AREA OF CRITICAL ENVIRONMENTAL CONCERN

Shay Canyon ACEC is located in the southern portion of the Indian Creek corridor and is adjacent to the northern boundary of the Manti-La Sal National Forest (Map ACEC-2). This ACEC is entirely within the boundary of the Indian Creek Unit. It includes sections of the upper Indian Creek drainage with a Special Emphasis Area for the protection of aquatic and riparian habitat delineated as a 275-foot corridor along upper Indian Creek. The rock writings within Shay Canyon and the dinosaur tracks on the canyon's streambed are specifically identified as Monument objects in Proclamation 9681. Relevant and important values that are also identified as Monument objects are afforded protection under the Antiquities Act (see Appendix A).

3.14.1.4. ARCH CANYON AND DARK CANYON INVENTORIED ROADLESS AREAS

The Arch Canyon IRA is located in the northern portion of the Shash Jáa Unit in the Manti–La Sal National Forest, and is contiguous with the BLM-administered North Mule Canyon Wilderness Study Area. The Dark Canyon IRA overlaps a small (approximately 5 acres) western portion of the Shash Jáa Unit in the Manti-La Sal National Forest, surrounding the Dark Canyon Wilderness Area. The USFS portions of the Monument containing the Arch Canyon and Dark Canyon IRAs (approximately 12,775 acres) are managed under the 2001 Roadless Rule (36 CFR 294) to protect their roadless character.

3.14.2. Environmental Consequences

3.14.2.1. ANALYSIS METHODS

ACEC management prescriptions apply only to those lands in each specific ACEC, as outlined in Chapter 2. These management prescriptions are designed to preserve the ACECs' relevant and important values.

The indicator of impacts on potential ACECs is management actions that would fail to "prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards" (BLM Manual 1613, Areas of Critical Environmental Concern). Depending on the values, such management actions include designations for OHV use, VRM class designations, ROW designations, availability for livestock grazing, recreation management decisions, and other limitations or restrictions on occupancy or use.

The indicators of impact on the IRA are the management actions that would fail to protect characteristics that make the IRA eligible for the National Wilderness Preservation System, which can be generally characterized as overall visual quality and naturalness of an area. This can be affected by changes to levels of recreation, development, and surrounding land use. Indicators that can be measured quantitatively are changes to the frequency and number of routes, including the number of unauthorized trails, and the number of encounters with other users.

3.14.2.2. DIRECT AND INDIRECT IMPACTS

3.14.2.2.1. San Juan River Area of Critical Environmental Concern

Similar management to support the San Juan River ACEC's relevant and important values related to wildlife, natural systems and processes, and geologic features would apply across alternatives. In general, this management provides for multiple uses of the ACEC while ensuring that specific resource conditions related to the relevant and important values are maintained. Under Alternative A, this includes limitations on private or commercial use of woodland products (closing 678 acres), availability for livestock grazing within certain terms and conditions and subject to achieving PFC, and limitations on recreational use, such as closures of some areas to camping and a prohibition on dispersed vehicle camping. Support of the ACEC's values is also provided by management that restricts surface-disturbing activities or confines it to specified areas, such as limiting OHV and mechanized use to designated routes (441 acres), designation of ROW avoidance areas in those portions of the ACEC intersected by the San Juan River SRMA (1,513 acres), and management as VRM Class I.

Under the action alternatives, the similar management prescriptions for the protection of the relevant and important values would apply, except that the entire ACEC would be a ROW avoidance area under Alternatives D and E (4,321 acres) and a ROW exclusion area under Alternatives B and C (4,321 acres). Expansion of ROW avoidance and exclusion areas within the ACEC would reduce the potential for surface-disturbing activities, which would provide more protection for the ACEC's relevant and important values than under Alternative A. Within the portion of the ACEC overlapping the San Juan River SRMA, dispersed vehicle camping would be allowed upstream of Comb Wash only in previously disturbed areas along designated routes. For those portions of the ACEC overlapping the SRMA, like Alternative A, Alternatives B, D, and E would also prohibit dispersed vehicle camping; however, Alternative C would allow it along designated routes. Dispersed vehicle camping can contribute to the persistence of existing surface disturbances or the creation of new surface disturbances near designated routes that could impact the ACEC's relevant and important values, such as sensitive plants, through trampling or increased rates of erosion. In general, all action alternatives would result in less potential for authorized activities negatively affecting the San Juan River ACEC than Alternative A.

3.14.2.2.2. Lavender Mesa Area of Critical Environmental Concern

Nearly identical management would apply across the alternatives and would support the relevant and important value of the mesa top's relict vegetation communities for their use in comparative studies. In particular, the mesa would be excluded from land treatments or other improvements, for any purpose other than those related to comparative studies. Helicopter access would be allowed to support these studies. While the maintenance of relict vegetation is effectively achieved through the mesa top's inaccessibility, it

is further supported through VRM Class I management, closure to OHV use, designation as a ROW avoidance area (Alternatives A, C, and E) or ROW exclusion area (Alternatives B and D), and the mesa top's unavailability for livestock grazing. These management actions limit the potential for surface-disturbing activities or the transmission of seeds, which could alter the relict vegetation. However, continued use of the mesa top for comparative studies presents the potential for unintended seed transmission if researchers do not decontaminate their clothing or equipment prior to conducting on-the-ground studies of the mesa top's vegetation communities. In general, all action alternatives would result in less potential for authorized activities negatively affecting the Lavender Mesa ACEC than Alternative A.

Under Alternative A, recreational use would be limited if monitoring demonstrates that it is having an adverse impact on the relict vegetation. Under the action alternatives, SRPs would not be issued for commercial or competitive use and permits would be required following current BLM permit and fee administration policy. Compared to Alternative A, these limitations on recreational use would further reduce the potential for surface-disturbing activities and seed transmission to the mesa top, which would support the preservation of the relict vegetation. Under Alternative B, access to the mesa top would be further restricted by prohibiting helicopter or drone access, which would reduce the potential for impacts to relict vegetation.

3.14.2.2.3. Shay Canyon Area of Critical Environmental Concern

Nearly identical management would apply across the alternatives and would support the relevant and important value of the canyon's rock writings sites. In general, this management is designed to contain surface-disturbing activities and visitor use to certain areas, which reduces the distribution of potential impacts and helps avoid visitor use in sensitive areas. This includes designating the area as an OHV limited area (except for Alternative B, where it would be closed), limiting hiking to designated trails except in side canyons, closure to camping, designation as a ROW avoidance area (Alternatives A, C, D, and E) or ROW exclusion area (Alternative B), and VRM Class II management. However, the canyon's cultural values would be further supported by the development of a cultural resource management plan.

Further, under the action alternatives, a cultural resource management plan would be developed for the entire Planning Area, which could further support the cultural values in Shay Canyon by applying a more comprehensive approach. Unlike the other alternatives, under Alternative B, hiking trails would be rerouted or closed if their use is impacting cultural site integrity. Comparatively, these limitations on access would reduce visitor use of the area and its associated potential for impacts to rock writing sites. In general, all action alternatives would result in less potential for authorized activities negatively affecting the Shay Canyon ACEC than Alternative A.

3.14.2.2.4. Arch Canyon and Dark Canyon Inventoried Roadless Areas

The USFS would continue to manage the Arch Canyon and Dark Canyon IRAs in accordance with the 2001 Roadless Rule (36 CFR 294) to protect their roadless character. This rule generally prohibits road construction, reconstruction, and timber harvest in IRAs because these activities have the greatest likelihood of altering and fragmenting landscapes, resulting in immediate, long-term loss of roadless area values and characteristics. Managing this area in accordance with the 2001 Roadless Rule (36 CFR 294) would ensure that no impacts would occur under Alternative A.

Alternatives B, C, D, and E would have the same impacts. Impacts to the Arch Canyon and Dark Canyon IRAs under these alternatives would be like those described under Alternative A, except Alternatives D and E would also manage this area as closed to OHV use, which would further protect roadless area values and characteristics. In general, all action alternatives would result in less potential for authorized activities negatively affecting the Arch Canyon and Dark Canyon IRAs than Alternative A.

3.15. Special Status Species

For the purposes of this EIS, *special status species* refers to species listed as threatened, endangered, or candidate under the ESA, species identified as sensitive by the BLM and/or USFS, and USFS Species of Conservation Concern (SCCs). USFS SCCs are discussed in Appendix P. Other fish and wildlife species are discussed in Section 3.20.

The BLM and USFS are responsible for managing habitat for special status plant and animal species. Additionally, special status plant and animal species' habitats have been identified as specific objects of historic and scientific interest associated with the Planning Area.

In general, objectives of the BLM and USFS for managing special status species include conservation and/or recovery of ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for those species and initiating proactive conservation measures that reduce or eliminate threats to BLM and USFS sensitive species to minimize the likelihood of a need for listing of those species under the ESA.

The indicators used for the analysis of potential effects to special status species and their habitats include habitat quality, acreage of special status species habitats present, and acreage of special status species habitat open/closed to potential surface-disturbing activities. Other potential impacts on special status species are assessed qualitatively.

Analysis areas are defined on a species-by-species basis. For species with habitats that have been identified and delineated or modeled, the analysis area includes the extent of those habitats overlapped by the Planning Area. For evaluation of special status aquatic plants and animals and aquatic species where habitats have not been identified or delineated, the analysis area consists of the extent of the HUC 10 watersheds present within BENM. For the Indian Creek Unit, this includes the Indian Creek, Harts Draw, and Salt Creek watersheds. For the Shash Jáa Unit, this includes the Comb Wash, Cottonwood Wash, Dark Canyon, Grand Gulch, Lime Creek, and White Canyon watersheds (Map RIP-3). The analysis areas were selected because they represent the areas within which changes to special status species populations could be observed because of management changes in the Planning Area.

3.15.1. Affected Environment

The Indian Creek and Shash Jáa Units are on the Colorado Plateau and are characterized by a diverse array of habitats and unique landforms that provide habitat requirements for many special status species to persist and reproduce. Special status species that may occur within the Indian Creek and Shash Jáa Units are presented in Table SSS-1 and include the following:

- Eight Federally threatened or endangered species currently listed under the ESA, including four bird species, two fish species, and two plant species

Thirty-nine sensitive species listed by the BLM, USFS, and UDWR (11 bird species; nine mammal species, five of which are bats; four fish species; four reptile or amphibian species; one invertebrate (snail) species, and 10 plant species) These species and their current listing status, habitat preference, and the Unit in which they may occur are discussed in detail in Sections 2.15.2.2.1 and 2.15.2.2.2 of the AMS. This information is incorporated into this section by reference.

Table SSS-1. U.S. Fish and Wildlife Service, BLM, USFS, and State Sensitive Species

Common Name (*Scientific Name*)	Status*	Habitat	Potentially Present in Shash Jáa (SJ) Unit or Indian Creek (IC) Unit
Birds			
American three-toed woodpecker (*Picoides dorsalis*)	BSS, FSS, USS	Nests and winters in coniferous forests generally above 8,000 feet	SJ, IC
Bald eagle (*Haliaeetus leucocephalus*)	BSS, FSS, USS, BGEPA	Roost and nests in tall trees near bodies of water	SJ, IC
Bobolink (*Dolichonyx oryzivorus*)	BSS, USS	Occupies wet meadows, irrigated agricultural fields, and habitats associated with riparian and/or wetlands areas	SJ, IC
Burrowing owl (*Athene cunicularia*)	BSS, USS	Occupies open grassland and prairies	SJ, IC
California condor (*Gymnogyps californianus*)	USFWS (E)	Roosts and nests in cliff habitats; forages in open areas	SJ, IC
Flammulated owl (*Psiloscops flammeolus*)	FSS	Occupies montane coniferous forests	SJ, IC
Ferruginous hawk (*Buteo regalis*)	BSS, USS	Occupies flat and rolling terrain in grassland or shrub steppe; nests on elevated cliffs, buttes, or creek banks	SJ, IC

Common Name (*Scientific Name*)	Status*	Habitat	Potentially Present in Shash Jáa (SJ) Unit or Indian Creek (IC) Unit
Lewis's woodpecker (*Melanerpes lewis*)	BSS, USS	Occupies ponderosa pine, Douglas-fir, mixed conifer, pinyon-juniper, and oak forests; also found in riparian cottonwoods	SJ, IC
Long-billed curlew (*Numenius americanus*)	BSS, USS	Occupies grasslands and herbaceous habitats	SJ, IC
Mexican spotted owl (*Strix occidentalis lucida*)	USFWS (Th)	Occupies steep, rocky canyons	SJ, IC
Northern goshawk (*Accipiter gentilis*)	BSS, FSS, USS	Occupies mature mountain forest and riparian zone habitats	SJ, IC
Peregrine falcon (*Falco peregrinus*)	FSS, USS	Found in steep, rocky canyons near riparian or wetland areas	SJ, IC
Short-eared owl (*Asio flammeus*)	BSS, USS	Occupies grasslands, shrublands, and other open habitats	SJ, IC
Southwestern willow flycatcher (*Empidonax traillii extimus*)	USFWS (E)	Found in low scrub, thickets, or groves of small trees, often near watercourses	SJ, IC
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	USFWS (Th)	Occupies riparian habitats and cottonwood galleries	SJ, IC
Mammals			
Allen's big-eared bat (*Idionycteris phyllotis*)	BSS, USS	Occupies rocky and riparian areas in woodland and scrubland	SJ, IC
Bighorn sheep (*Ovis canadensis*)	FSS	Desert subspecies; occurs in desert grasslands, shrublands, and canyons	SJ
Big free-tailed bat (*Nyctinomops macrotis*)	BSS, USS	Found in rocky and woodland habitats	SJ, IC
Fringed myotis (*Myotis thysanodes*)	BSS, USS	Found in desert and woodland areas; roosts in caves, mines, and buildings	SJ, IC
Kit fox (*Vulpes macrotis*)	BSS, USS	Occupies semidesert grasslands and open shrublands	SJ, IC
Gunnison's prairie dog (*Cynomys gunnisoni*)	BSS, USS	Found in grasslands and semidesert and montane shrublands	SJ, IC
Spotted bat (*Euderma maculatum*)	BSS, FSS	Uses various vegetation types, from desert shrub to montane forests; roosts in rock crevices high on steep cliff faces	SJ
Silky pocket mouse (*Perognathus flavus*)	BSS, USS	Found in sandy soils in arid grassland, woodland, and sagebrush areas	SJ, IC
Townsend's big-eared bat (*Corynorhinus townsendii*)	BSS, FSS, USS	Occurs across many habitats but is often found near forested areas; roosts and hibernates in caves, mines, and buildings	SJ, IC
Fish			
Bluehead sucker (*Catostomus discobolus*)	BSS	Occupies fast-flowing water in high-gradient reaches of mountain rivers	SJ, IC
Colorado pikeminnow (*Ptychochelius lucius*)	USFWS (E)	Adults found in habitats ranging from deep turbid rapids to flooded lowlands; young prefer slow-moving backwaters	SJ
Colorado River cutthroat (*Oncorhynchus clarki pleuriticus*)	BSS, FSS	Found in steep cold water streams and rivers, often headwater streams in Utah	SJ, IC
Flannelmouth sucker (*Catostomus latipinnis*)	BSS	Occupies large rivers; often found in deep pools of slow-flowing, low-gradient reaches	SJ
Razorback sucker (*Xyrauchen texanus*)	USFWS (E)	Occupies slow backwater habitats and impoundments	SJ
Roundtail chub (*Gila robusta*)	BSS	Occupies large rivers, most often in murky pools near strong currents	SJ
Amphibians and Reptiles			
Cornsnake (*Pantherophis guttatus*)	BSS, USS	Found near streams or in rocky or forest habitats	IC
Desert night lizard (*Xantusia vigilis*)	BSS, USS	Occupies arid and semiarid habitats; ranges into pinyon-juniper, sagebrush-blackbrush, and chaparral-oak	SJ
Great Plains toad (*Anaxyrus congnatus*)	BSS, USS	Found in cropland/hedgerow, desert, grassland/herbaceous, shrubland/chaparral, and orchard habitats	SJ, IC

Common Name (*Scientific Name*)	Status*	Habitat	Potentially Present in Shash Jáa (SJ) Unit or Indian Creek (IC) Unit
Smooth green snake (*Opheodrys vernalis*)	BSS, USS	Prefers moist areas, especially moist, grassy areas and meadows	SJ, IC
Invertebrates			
Yavapai mountainsnail (*Oreohelix yavapai*)	USS	Found at higher elevations in aspen groves and spruce stands with open spaces of coarse grass and slides of sandstone	IC
Plants			
Alcove rock-daisy (*Perityle specuicola*)	BSS	Found in drier crevices in seasonally wet hanging gardens and alcove communities; Navajo and Wingate sandstone and Rico Formation, but not substrate specific; blooms in mid-July to late September at 3,690–4,000 feet in elevation	SJ, IC
Bluff buckwheat (*Eriogonum racemosum* var. *nobile*)	BSS	Found in juniper and ponderosa pine communities from 6,200 feet to 7,215 feet in elevation	SJ, IC
Bluff phacelia (*Phacelia indecora*)	BSS	Found in hanging garden alcoves at 3,600–4,500 feet in elevation	SJ, IC
Canyonlands prairie clover (*Dalea flayescens* var. *epica*)	BSS	Occupies sandstone bedrock and sandy areas in blackbrush and mixed desert shrub communities at 4,700–5,000 feet in elevation	SJ, IC
Canyonlands lomatium (*Lomatium latilobum*)	BSS, FSS	Found in sandy soil or crevices in Entrada and Navajo sandstone and slot canyons; prefers sheltered, cool habitats on all slopes and aspects; blooms from April to June at elevations of 4,800–6,855 feet	SJ, IC
Chatterley onion (*Allium geyeri* var. *chatterleyi*)	FSS	Found in pinyon-juniper, mountain mahogany, and ponderosa pine/manzanita communities where there is open, shallow, fine-textured sandy loam soil and rock outcrops at elevations of 6,600–8,200 feet	SJ
Jane's globemallow (*Sphaeralcea janeae* or *S. leptophylla* var. *janeae*)	BSS	Found in sandy soils of weathered White Rim and Organ Rock members of the Cutler Formation and warm and salt desert shrub; blooms from May to June at elevations of 4,000–4,600 feet	SJ, IC
Jones cycladenia (*Cycladenia humilis* var. *jonesii*)	USFWS (Th)	Occurs on shallow soils developed from shale on the Chinle, Cutler, and Summerville Formations. Associated with buckwheat and Mormon tea, cool desert shrub and juniper communities between 4,400 and 6,000 feet.	SJ, IC
Kachina daisy (*Erigeron kachinensis*)	BSS, FSS	Found near lower elevation seeps, hanging gardens, sandstone outcrops, wet sandy soils, and sandstone crevices; blooms from May through July at elevations above 7,000 feet.	SJ, IC
Navajo sedge (*Carex specuicola*)	USFWS (Th)	Occurs primarily in Navajo Sandstone seeps or hanging gardens, on vertical sandstone cliffs and alcoves between 4,600 and 7,200 feet. Also occurs in the Cedar Mesa, De Chelly, and Kayenta Sandstone formations.	SJ, IC
Paradox breadroot (*Pediomelum aromaticum* var. *tuhyi*)	BSS	Occurs in pinyon-juniper and mixed desert shrub on Entrada, Kayenta, and Mossback formations; blooms from May through June at elevations of 5,600–6,500 feet	SJ, IC
Pinnate spring-parsley (*Cymopterus beckii*)	FSS	Occurs in sandy soils weathered from Navajo sandstone and on slickrock ledges and cracks, generally in association with montane vegetation types; blooms from April through July at elevations of 5,600–8,700 feet	SJ

* Status: BGEPA: Bald and Golden Eagle Protection Act; BSS: BLM sensitive species; FSS: USFS sensitive species; USFWS (E): Federally endangered species; USFWS (Th): Federally threatened species; USS: Utah sensitive species.

Increased periodicity of drought conditions in the Planning Area in the future suggests that populations of special status species would need to adapt to changes in the environment to maintain or increase the population. As described in the AMS (see Section 2.1.2.1.10), within the Planning Area, the Indian Creek Unit shows primarily very low to moderate potential for long-term climate change effects, with the exception of the southern portion of the Unit that has very high potential for effects; climate change potential in the Shash Jáa Unit ranges from moderate to very high. Anticipated climate change effects include general warming and a decline in precipitation, with the potential for severe drought to occur. Specific impacts related to climate change are difficult to address at a site-specific level. During periods of prolonged drought and harsh winters, wildlife populations can decrease significantly due to increased mortality, especially among young individuals. Anthropogenic effects have caused habitat destruction

and/or degradation over time, leading to habitat loss and fragmentation, which is often correlated with decreases in wildlife populations.

3.15.2. Environmental Consequences

3.15.2.1. ANALYSIS METHODS

For the evaluation of potential impacts, special status species with similar life histories and habitat requirements are grouped together for discussion to eliminate redundancy. Impacts to special status species may occur because of effects on their potential habitats, which may serve as important foraging and/or breeding habitat necessary for their success at the population level. In total, potential impacts to 48 species are analyzed in this section; their habitats and statuses are listed in Table SSS-1. The BLM and USFS provide special consideration and protections from disturbance to special status species when planning implementation-level projects. These protections would generally avoid or minimize impacts to these species. Additionally, stipulations are in place to further minimize potential impacts to special status species (see Appendix J).

3.15.2.2. IMPACTS TO BIRDS

In all, 15 special status bird species have been identified as possibly occurring within the Planning Area. While many of these birds would be expected to utilize the different habitats available (e.g., forests, grasslands, riparian areas, and cliffs), impacts based on management decisions would be similar across all species and would largely be based on increased use over time. Alternatives B, C, D, and E would apply nesting season time frame requirements that would be more reflective of management needed to avoid impacts on birds within the BENM than those under Alternative A. In general, all action alternatives would include more management actions addressing potential impacts to special status bird species and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.11.2).

3.15.2.2.1. Passerines

All the species analyzed in this section are afforded protections under the MBTA as well as additional management considerations based on their special status. Due to additional management for special status species, direct impacts to any of these species would be limited under any of the alternatives.

Under all alternatives, surface-disturbing activities would be minimized to the extent practicable during the nesting season. While hiking and camping would not generally be expected to cause adverse impacts to bird populations, habitat degradation could occur in the immediate vicinity of high-use trails and could affect forage and nesting habitat. Increased noise levels would likely result in temporary displacement of birds. In general, the majority of the Planning Area would not be expected to experience high noise levels under any alternative. OHV use and vehicle traffic are anticipated to be the primary sources of noise, which would be limited to roads and trails. Likelihood of nest abandonment is greater for nests close to existing OHV trails relative to nests at greater distances. Additionally, a study discovered that nests are less common near OHV trails, suggesting that birds avoid nesting in areas where disturbance regularly occurs (Barton and Holmes 2007). Table SSS-2 displays linear miles of designated routes in OHV limited areas under each alternative. Areas within 100 meters of these routes would likely subject nesting birds to greater disturbance, relative to those nesting birds farther than 100 meters from existing trails. In general, under Alternatives A, D, and E, the number of designated routes throughout the Planning Area would remain unchanged; under Alternative B, a portion of the existing designated routes for OHV use would be located in areas designated as closed to OHVs use; OHV use would not be allowed on those portions of the routes within these closed areas, providing the least potential impact to wildlife species.

Table SSS-2. Designated Routes in OHV Limited Areas

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Designated routes (linear miles)	373 (99%)	314 (82%)	373 (99%)	373 (99%)	373 (99%)

Bird mortality/nest destruction by livestock is a rare occurrence and adherence to or moving toward adherence to *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or USFS desired conditions for rangelands would minimize potential impacts to birds.

Tree-nesting birds would be expected to experience little impact because many of the management decisions would foster forest health. For this reason, management decisions would likely result in benefits to these birds. Such species include American three-toed woodpecker, flammulated owl, and Lewis's woodpecker.

Section 3.18 addresses the potential impacts of the alternatives on vegetation, including riparian areas that provide habitats for special status passerine species. In general, Alternatives A, D, and E would allow more resource uses, including ROWs, OHV use, livestock grazing, vegetation treatments, and larger group sizes and less restricted recreational activities compared to Alternatives B and C. These alternatives would be anticipated to have the greatest impacts on special status passerine species; however, Alternatives B, C, D, and E would apply nesting season time frame requirements that would be more reflective of management needed to avoid impacts on birds within the BENM than those under Alternative A. Alternative B would have the fewest impacts on special status passerine species. However, under all alternatives, most habitats in the Planning Area are anticipated to remain undisturbed through the life of the plan. Therefore, the existing distribution and population levels for special status passerine species would be anticipated to continue through the life of the plan.

3.15.2.2.2. Western Yellow-Billed Cuckoo and Southwestern Willow Flycatcher

Both western yellow-billed cuckoo (listed as threatened under the ESA) and southwestern willow flycatcher (listed as endangered under the ESA) utilize riparian habitat. Potential habitat for these species has been mapped along major perennial and intermittent stream systems (Maps SSS-1 and SSS-2), and designated critical habitat for the southwestern willow flycatcher is located in the southern portion of the Planning Area along the San Juan River. There is approximately 5,103 acres of habitat for these species in the BENM, with approximately 1,149 acres in the Indian Creek Unit and 3,954 acres in the Shash Jáa Unit.

Recreational use could cause displacement of some bird species, especially within riparian areas. Alternatives that would allow more permissive camping, and other recreational use in riparian areas would have greater impacts on habitats for these species. Alternatives A, C, D, and E would maintain similar recreation use levels in riparian areas. Alternative B would allow less access and would have fewer impacts on these species.

Surface-disturbing activities could also remove or fragment riparian habitats used by these species and result in noise that decreases the value of otherwise undisturbed habitats. Under Alternatives A, B, D, and E prescribed riparian buffers would be employed where larger buffers with more restrictive uses would generally be more protective of riparian areas. Under Alternative C, riparian buffers would be developed using the method developed by Johnson and Buffler (2008) on a case-by-case basis. This alternative would have fewer impacts on yellow-billed cuckoo and southwestern willow flycatcher from noise or other indirect impacts of surface-disturbing activities. Alternatives D and E would include the potential for closure of riparian areas to permitted activities if monitoring shows that the permitted activity is a causal factor in riparian areas Functioning at Risk. Closures would be lifted when changes in the permitted activity provide for restoration and maintenance of riparian area PFC. This would result in fewer potential impacts to riparian areas, yellow-billed cuckoo, and southwestern willow flycatcher habitats than under Alternative A.

Livestock grazing could result in impacts similar to those described for passerines above. However, grazing would adhere to or move toward adherence to *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or USFS desired conditions for rangelands. Therefore, impacts related to grazing on these species would be minimized. Areas open and closed to activities associated with potential western yellow-billed cuckoo and southwestern willow flycatcher habitat by alternative are presented in Table SSS-5.

Under all alternatives, vegetation treatments could occur within riparian areas based on the quality of the habitat and the extent to which invasive/noxious plant species occur within these areas. Treatments would not occur during the breeding season to avoid impacts to nesting bird species. Additionally, treatment of tamarisk would not be performed during nesting season for southwestern willow flycatcher because it is possible that this species may utilize such invasive trees for nesting. Outside of nesting season, tamarisk may be treated. Removing woody and herbaceous invasive species from riparian communities reduces the risk of high-severity fire, restores natural ecological and hydrological processes, helps to achieve or maintain proper

functioning condition, improves system resiliency, and provides opportunities for passive or active revegetation of native species. It would be expected that, over time, treatment of invasive/noxious plant species would enhance riparian habitat and be beneficial to these bird species. Any surface-disturbing activities with the potential to adversely impact either of these species would be coordinated with the USFWS to comply with the ESA.

3.15.2.2.3. Raptors

Raptors are offered the same protections as all other birds under the MBTA; however, due to their sensitivities, raptors generally receive additional protections in the form of management prescriptions to further protect these species from impacts. Under all alternatives, raptor management within the Planning Area would be guided by *Best Management Practices for Raptors and Their Associated Habitats in Utah* (see Appendix H). Often these prescriptions include buffer areas around sensitive nesting areas developed in coordination with the USFWS (see Appendix H). Additionally, golden and bald eagles are further protected under the Bald and Golden Eagle Protection Act. Special status raptors that are further evaluated include peregrine falcon, Mexican spotted owl, northern goshawk, and bald eagle.

Peregrine Falcon

Peregrine falcon (USFS and UDWR sensitive species) is a cliff-nesting species that is known to nest within both the Indian Creek and Shash Jáa Units of the Planning Area and would be subjected to recreational impacts that may not be experienced by other tree- and ground-nesting raptor species. Impacts may include nest disturbance from recreational rock climbing.

Under all alternatives, to protect actively nesting raptors from climbers, seasonal management restrictions may be put in place at specific areas in the Planning Area, and educational information and signage would be provided to alert climbers and facilitate reduction of climbing/canyoneering impacts on active raptor nests. Under Alternative C, monitoring of nests would occur to reopen climbing areas after the nesting period or historical nest locations are deemed to no longer be active. Under Alternatives A, D, and E, areas near raptor nests would be temporarily closed to climbing and other activities if the activity may result in nest abandonment. Alternative B would provide the most restrictive protections to raptors from climbers by temporarily closing areas and applying recommended raptor buffers, as described in Appendix H.

Mexican Spotted Owl

The Mexican spotted owl is listed as threatened under the ESA and is known to occur in deep rock canyons and forested areas within the Planning Area. Designated critical habitat for this species occurs throughout both the Indian Creek and Shash Jáa Units (Maps SSS-3 and SSS-4). Table SSS-3 presents the Mexican spotted owl designated critical habitat in the Planning Area.

Table SSS-3. Critical Habitat for Mexican Spotted Owl by Unit

Habitat Types (acres)	Indian Creek	Shash Jáa	Total
Area of designated critical habitat (acres)	62,553	43,916	106,469

Recreational use, including OHV riding, is likely to cause noise disturbance that could result in temporary displacement of this species. Any surface-disturbing activities with the potential to adversely impact this species would be coordinated with the USFWS to comply with the ESA. Furthermore, adherence to the approved Recovery Plan (USFWS 2012) would be implemented to minimize the potential of impacting known nesting and/or roosting Mexican spotted owl individuals and, to the extent practicable, surface-disturbing activities would be avoided in areas known to provide important habitat for this species. Furthermore, per the approved Recovery Plan (USFWS 2012) recreational activities in canyon habitat have the greatest potential to adversely impact Mexican spotted owl; for this reason, limitations on camping and overnight use would be in place under all alternatives in Mexican spotted owl–occupied canyon habitat. Areas open and closed to activities associated with potential Mexican spotted owl habitat by alternative are presented in Table SSS-5.

Northern Goshawk

Northern goshawk is a USFS, BLM, and UDWR sensitive species and a USFS management indicator species (MIS). The MIS analysis is included in Section 3.20.

Activities that could impact this species within the Planning Area include recreational activities (including OHV riding) and forest harvesting. Recreational activities may temporarily displace goshawk, although low-impact activities, such as hiking, and camping would not be expected to cause any long-term impacts. OHV riding can create loud noises that could cause temporary displacement. Noise impacts would cause the greatest potential impacts during sensitive periods, such as nesting, when loud, recurring disturbances could eventually lead to nest abandonment over time.

During the nesting period for this species, management activities and human use that the USFS permits would be limited to only those activities not likely to result in nest abandonment. Additionally, prior to any management activities that could result in adverse impacts to nesting northern goshawk, territory occupancy surveys would be completed. Mitigation would be required to offset the net loss of habitat for any management activities not related to vegetation management that would result in a loss of suitable habitat. Alternative A allows for private and commercial use of woodland products in particular zones. This woodland product use could cause noise displacement and habitat loss. Alternatives B, C, D, and E allow for only private use of woodland products in the same zones. Alternatives B, C, D, and E would designate USFS-administered lands in the Monument as unsuitable for timber production; these lands would be withdrawn from that use (this would not preclude the use of pre-commercial and commercial treatments to meet forest goals and objectives). Designating USFS-administered lands in the Monument as unsuitable for timber production would reduce the frequency and intensity of forest management activities on northern goshawk. Additionally, under all alternatives, raptor management would be guided by Appendix H.

Bald Eagle

Bald eagle is offered protections under the Bald and Golden Eagle Protection Act, and it is listed as a sensitive species under the USFS, BLM, and UDWR. Potential habitat for this species is present in forested regions throughout the Planning Area; however, there are currently no known bald eagle nests within the Planning Area. There are approximately 27,486 acres of habitat for the species in the Planning Area, including 19,979 acres in the Indian Creek Unit and 7,507 acres in the Shash Jáa Unit (Maps SSS-5 and SSS-6). Under all alternatives, raptor management would be guided by raptor BMPs (see Appendix H), and, for this reason, direct impacts to nesting eagles are unlikely. However, impacts associated with noise and recreation may impact this species in a similar fashion as Mexican spotted owl and northern goshawk. Areas open and closed to activities associated with potential bald eagle habitat by alternative are presented in Table SSS-5.

California Condor

The California condor is a Federally listed endangered species with nonessential experimental status in Utah south of Interstate 70 and west of US-191. The entire Planning Area is within the nonessential experimental population area. Under Section 10(j) of the ESA, this means that the species is treated as though it is proposed for listing rather than as endangered under the ESA. California condors are not known to frequent the Planning Area for foraging, roosting, or other essential functions; however, as this species will travel up to 150 miles per day in search of forage, they have the potential to move through the area where ample foraging habitat is present.

Under all alternatives, raptor management would be guided by practices identified in *Best Management Practices for Raptors and Their Associated Habitats in Utah* (see Appendix H) and the approved *Recovery Plan for the California Condor* (Kiff et al. 1996), and any surface-disturbing activities with the potential to adversely impact this species would be coordinated with the USFWS to comply with the ESA. For these reasons, direct impacts to any potential nesting condors are unlikely. Some of the management actions that would be authorized or carried out under the MMPs could indirectly affect California condors, their habitat, and their food sources, should the species utilize the Planning Area. The most common types of impacts would be from human presence and noise from motorized vehicles and equipment; however, because of the low likelihood of presence in the Planning Area, the large range of the species, and the temporary, intermittent nature of recreational disturbances, it is anticipated that any potential indirect impacts would be negligible.

Under all alternatives, most of the habitat in the Planning Area is anticipated to remain undisturbed throughout the life of the plan. Alternatives A, D, and E would allow more resource uses, including areas

available for motorized recreation (but still limited to roads and trails), larger group sizes, and less restricted recreational activities compared to Alternatives B and C. These alternatives would be anticipated to have the greatest potential for indirect impacts to California condor. Alternative B would have the fewest potential impacts on the species. All action alternatives would apply nesting season timeframe requirements that would avoid potential impacts on California condor.

3.15.2.3. IMPACTS TO MAMMALS

3.15.2.3.1. Bats

Sensitive status bat species with the potential to occur in the Planning Area include Allen's big-eared bat (BLM and Utah sensitive species), big free-tailed bat (BLM and Utah sensitive species), fringed myotis (BLM and Utah sensitive species), spotted bat (BLM and USFS sensitive species), and Townsend's big-eared bat (BLM, USFS, and Utah sensitive species). In general, the Planning Area contains foraging areas that may include a variety of habitats, but, generally, riparian areas would provide the best food sources. For this reason, impacts to riparian areas could affect the quantity and extent of foraging areas for these species. Additionally, impacts to caves and rock outcrops, where many of these species roost, could result in additional disturbances to these species.

No direct impacts to bat populations would be expected from potential impacts related to grazing. Furthermore, under all alternatives, grazing would adhere to or move toward adherence to *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or USFS desired conditions for rangelands; for these reasons, impacts related to grazing would be minor.

Recreational activities such as climbing and OHV riding could disturb roosting bats, which could result in displacement and potential abandonment of roosting locations. Climbers could encounter roosting bats; however, the likelihood of this is low because bats generally prefer protected caves and rock outcrops. The impacts associated with OHV riding—specifically, from the increased noise levels that accompany this activity—are more likely. Increased noise levels during foraging can cause bats to avoid areas for feeding (Schaub et al. 2008) and ultimately limit potential foraging areas available to bats. However, it would be expected that noise levels would play little role in foraging behavior throughout the Planning Area, given the amount of riparian habitat available for foraging versus the relatively limited riparian area available for OHV use. In general, all action alternatives would result in less potential for surface disturbance affecting special status bat species than Alternative A and include more management actions addressing potential impacts to special status bat species and the proper care and management of related Monument objects and values than Alternative A (see Section 2.4.11.2).

3.15.2.3.2. Kit Fox

Kit fox is a BLM and UDWR sensitive status species. Management decisions with the greatest potential impacts to kit fox are related to OHV riding and improper placement of guzzlers. All action alternatives would include more management actions addressing potential impacts to special status species and the proper care and management of related Monument objects and values than Alternative A (see Section 2.4.11.2).

Kit fox could be present throughout much of the Planning Area in shrub type habitats, including denning individuals. Kit fox could experience temporary impacts from OHV riding, where noise could elicit a predator response, causing increased stress in the animal and temporary displacement (Francis and Barber 2013). Additionally, grazing management could result in decreased vegetative cover, which could indirectly impact kit fox. A decrease in vegetation could limit the amount of cover for prey species such as mice, causing a temporary decrease in forage species. However, given the size of the Planning Area, it is likely that kit fox would be able to utilize other locations for prey.

Vegetation treatments—especially prescribed burns—could impact this species. However, because this species is protected, efforts to manage kit fox and minimize impacts to its populations would be in place and therefore no prescribed burns would occur where known active dens are present. Furthermore, vegetation management would aim to improve habitat for wildlife by eliminating nonnative/noxious plant species.

3.15.2.3.3. Gunnison's Prairie Dog

Gunnison's prairie dog is listed as a BLM sensitive species. Habitat for Gunnison's prairie dog is primarily found in the Shash Jáa Unit; however, a small amount of potential habitat is present in the Indian Creek Unit (Table SSS-4; Maps SSS-7 and SSS-8). Areas open and closed to activities associated with potential Gunnison's prairie dog habitat by alternative are presented in Table SSS-5.

Table SSS-4. Potential Habitat for Gunnison's Prairie Dog

	Indian Creek Unit	Shash Jáa Unit	Total
Area of potential habitat (acres)	7	6,706	6,713

Gunnison's prairie dog would be susceptible to similar impacts as those described for kit fox above. Furthermore, adherence to or moving toward adherence to *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or to USFS desired conditions for rangelands would minimize potential impacts to this species. All action alternatives would include more management actions addressing potential impacts to special status species and the proper care and management of related Monument objects and values than Alternative A (see Section 2.4.11.2).

Table SSS-5. Potential Disturbance within Special Status Species Habitat

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Yellow-billed cuckoo and southwestern willow flycatcher					
Area available/suitable for grazing within potential habitat (acres)	4,659 (92%)	3,170 (63%)	4,642 (92%)	4,663 (92%)	4,661 (92%)
Area designated as OHV limited within potential habitat (acres)	4,848 (96%)	2,342 (46%)	4,848 (96%)	4,848 (96%)	4,848 (96%)
Area open to woodland harvest within potential habitat (acres)	760 (15%)	31 (<1%)	38 (<1%)	38 (<1%)	Same as Alternative A
Area open to ROW within potential habitat (acres)	1,650 (33%)	0 (0%)	0 (0%)	550 (11%)	550 (11%)
ROW avoidance area within potential habitat (acres)	3,557 (68%)	0 (0%)	1,072 (21%)	4,442 (88%)	4,442 (88%)
Mexican spotted owl					
Area available/suitable for grazing within critical habitat (acres)	84,174 (90%)	70,430 (75%)	80,097 (86%)	70,430 (75%)	70,430 (75%)
Area designated as OHV limited within critical habitat (acres)	69,482 (75%)	32,373 (35%)	69,482 (75%)	69,482 (75%)	69,482 (75%)
Area open to woodland harvest within critical habitat (acres)	30,837 (33%)	18,229 (20%)	25,566 (27%)	25,566 (27%)	Same as Alternative A
Area open to ROW within critical habitat (acres)	81,734 (88%)	0 (0%)	0 (0%)	43,919 (47%)	43,919 (47%)
ROW avoidance area within potential habitat (acres)	720 (1%)	0 (0%)	22,000 (24%)	39,713 (41%)	39,713 (41%)
Bald eagle					
Area available/suitable for grazing within potential habitat (acres)	26,779 (98%)	26,555 (97%)	26,787 (98%)	26,828 (98%)	26,828 (98%)
Area designated as OHV limited within potential habitat (acres)	25,824 (95%)	18,487 (68%)	25,824 (95%)	25,824 (95%)	25,824 (95%)
Area open to woodland harvest within potential habitat (acres)	16,147 (59%)	9,822 (36%)	12, 854 (47%)	12, 854 (47%)	Same as Alternative A
Area open to ROW within potential habitat (acres)	22,963 (82%)	0 (0%)	0 (0%)	26,478 (97%)	26,478 (97%)
ROW avoidance area within potential habitat (acres)	4,261 (15%)	0 (0%)	19,355 (71%)	7,572 (28%)	7,572 (28%)
Gunnison's prairie dog					
Area available/suitable for grazing within potential habitat (acres)	6,668 (100%)	6,250 (93%)	6,668 (100%)	6,668 (100%)	6,668 (100%)
Area designated as OHV limited within potential habitat (acres)	6,687 (100%)	5,241 (78%)	6,687 (100%)	6,687 (100%)	6,687 (100%)
Area open to woodland harvest within potential habitat (acres)	744 (11%)	553 (8%)	560 (8%)	560 (8%)	Same as Alternative A
Area open to ROW within potential habitat (acres)	382 (6%)	0 (0%)	0 (0%)	260 (4%)	260 (4%)
ROW avoidance area within potential habitat (acres)	6,456 (94%)	0 (0%)	314 (5%)	6,435 (96%)	6,435 (96%)

3.15.2.3.4. Silky Pocket Mouse

Silky pocket mouse is a BLM and UDWR sensitive species. This species has potential habitat throughout the Planning Area, specifically in arid grasslands, forests, and sagebrush habitats. This species is most susceptible to management decisions related to grazing and vegetation treatment.

The silky pocket mouse feeds almost exclusively on grass seeds. While vegetative cover could decrease over time as a result of grazing, the silky pocket mouse would likely still have ample cover for foraging, given its somewhat limited forage requirements. Under all alternatives, grazing would adhere to or move toward adherence to *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or to USFS desired conditions for rangelands, which would minimize potential impacts related to habitat degradation.

Additionally, vegetation management could result in the mortality of individuals of this species. Silky pocket mouse is a cryptic species that can be difficult to identify, and therefore treatments of invasive/noxious plants could inadvertently result in the mortality of some individuals. However, the goal of vegetation management is to create healthier and higher-quality habitats, so although vegetation management could result in mortality over time, vegetation management would create better habitat for many wildlife species, including the silky pocket mouse. All action alternatives would result in less potential for surface disturbance affecting special status species than Alternative A and include more management actions addressing the proper care and management of related Monument objects and values than Alternative A (see Section 2.4.11.2).

3.15.2.3.5. Bighorn Sheep

Mapped bighorn sheep habitat falls 2 miles outside of both the Indian Creek and Shash Jáa Units and approximately 30 feet outside of the Doll House parcel in the Shash Jáa Unit. Given the short distance between mapped bighorn sheep habitat and the Planning Area, individuals may occasionally cross into the Planning Area. While this species could experience impacts based on management decisions, it would be expected that such impacts would be minimal and potentially affect only a small subset of the greater population due to the lack of habitat for this species within the Planning Area.

Bighorn sheep is a USFS sensitive species. As a big game species, it would be subject to similar impacts as those described in Section 3.20.2 for big game. In general, management of recreation, OHV use, livestock grazing, and noise has the potential to adversely impact individuals that cross into the Planning Area. The BLM would coordinate with UDWR desert bighorn sheep restoration efforts in historically unoccupied habitat present within the Planning Area. In general, all action alternatives would result in less potential for surface disturbance affecting bighorn sheep than Alternative A, and include more management actions addressing the proper care and management of Monument objects and values than Alternative A (see Section 2.4.11.2).

3.15.2.4. IMPACTS TO FISH

The San Juan River is designated critical habitat for the Federally endangered Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*) within the Shash Jáa Unit. Additionally, bluehead sucker (*Catostomus discobolus*) occurs in the Arch Canyon area, and Indian Creek may have Colorado River cutthroat (*Oncorhynchus clarki pleuriticus*) present; however, this species' presence has not been confirmed. For these reasons, it is the BLM's goal to implement recovery actions from the Upper Colorado River Endangered Fish Recovery Program to contribute to meeting delisting criteria for these species. Elements of the Upper Colorado River Endangered Fish Recovery Program focused on restoration of flood flows, management of nonnative fish species, and stocking; research and monitoring are implemented by the USFWS (USFWS 2018). However, Monument management activities consistent with the recovery program include protection of instream flow and habitat restoration elements. Any new water depletions occurring either within the Planning Area or upstream of the Planning Area would be subject to Section 7 consultation with the USFWS about impacts to threatened and endangered fish species and are not discussed under this management plan. Special status fish species with habitat requirements that include large rivers, inundated floodplains, pools, and swift waters (see Table SSS-1) would benefit from management consistent with the Upper Colorado River Endangered Fish Recovery Program. Management alternatives that limit OHV use, grazing, recreational use, and ROW development; protect wilderness characteristics; and restrict surface disturbance within the 100-year floodplain would also likely protect

special status species in the San Juan River. The potential impacts related to special status fish species include impacts to riparian areas within the Planning Area, which are discussed in Section 3.12. Alternative C would be most protective of riparian areas from direct surface-disturbance impacts because there are no defined use exceptions within riparian areas. Although Alternative B provides a larger buffer to surface disturbance than Alternatives A, D, and E and thereby reduces potential indirect impacts, direct riparian impacts would be similar under all three alternatives. The greatest potential impacts would occur under Alternatives A, D, and E; however, Alternatives D and E would include the potential for closure of riparian areas to permitted activities if monitoring shows that the permitted activity is a causal factor in riparian areas Functioning at Risk. The closures would be lifted when the changes in the permitted activity provide for restoration and maintenance of riparian area PFC. This would result in fewer potential impacts to riparian areas and fish than under Alternative A.

Outside of the San Juan River, special status fish species' habitat may be provided in higher-gradient perennial reaches of Arch Creek in the Shash Jáa Unit and Indian Creek in the Indian Creek Unit. Impacts to special status fish in these streams would be influenced by management activities affecting riparian areas (see Table SSS-6), stream habitat, and water quality and quantity. The BLM will implement conservation strategies for the bluehead sucker in these areas where habitat for these species is present (UDNR 2006a, UDNR 2006b). Additionally, a roadway in the Arch Canyon area crosses Arch Creek at multiple locations, which could impact special status fish species at those specific crossing areas. Alternative B would designate Arch Canyon as an OHV closed area, removing the potential impacts of OHV use on the fish habitats in this area.

3.15.2.5. IMPACTS TO AMPHIBIANS AND REPTILES

Four amphibian or reptile species have been identified as special status species: cornsnake, desert night lizard, Great Plains toad, and smooth green snake, all of which are BLM and UDWR sensitive species. These four species are evaluated together because impacts related to the management of the Planning Area would be similar. In general, preferred habitat for cornsnake and smooth green snake is considered to be riparian areas within the Planning Area, and therefore allowed surface-disturbing uses in riparian habitat is being assessed to determine potential impacts to these species (Table SSS-6). Due to the broad habitat requirements for desert night lizard and Great Plains toad, their habitat is considered the entire Planning Area for impact assessment.

These species would be susceptible to ground disturbance—most notably, management decisions regarding OHV use. Reptiles and amphibians, although motile, are less agile than bird species, and therefore individuals could experience direct mortality from OHV use because reptiles often sun themselves in open areas, which include existing trails.

Table SSS-6. Riparian Habitat Open to Surface Disturbance by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Riparian habitat available/suitable for grazing (acres)	5,553 (92%)	2,891 (48%)	5,544 (91%)	5,566 (92%)	5,558 (92%)
Riparian habitat designated as OHV limited (acres)	5,775 (95%)	2,891 (48%)	5,775 (95%)	5,775 (95%)	5,775 (95%)
Riparian habitat open to ROW (acres)	2,758 (43%)	0 (0%)	0 (0%)	1,136 (19%)	1,136 (19%)
ROW avoidance area within potential habitat (acres)	3,517 (55%)	0 (0%)	1,691 (28%)	4,817 (79%)	4,817 (79%)

Vegetation treatments—specifically prescribed burns—have the potential to impact reptile and amphibian populations within the Planning Area. A study by Jofre and Reading (2012) suggests that controlled burns have the capacity to cause significant mortality of reptiles within the burn area (Jofre and Reading 2012). In the event that controlled burns are executed, it is assumed that such areas are in degraded health and would return as higher-quality habitat, which would be beneficial to all wildlife utilizing the areas. Protections associated with riparian areas would limit disturbances in habitat preferred by cornsnake and smooth green snake.

3.15.2.6. IMPACTS TO PLANTS

In total, 12 species of special status plants may occur within the Planning Area (see Table SSS-1). Impacts to these species are addressed together because the impacts would be similar across all species. Although the extent to which these species occur throughout the Planning Area is relatively unknown, one species—

Navajo sedge, which is Federally threatened—is known to occur in localized hanging garden habitats within the Shash Jáa Unit and has a geospatially modeled range of habitat potential based on rock formation (Maps SSS-9 and SSS-10); its occurrence would be further limited to seeps and hanging gardens within the modeled area. Another Federally threatened species, Jones cycladenia (*Cycladenia humilis*), is not known to occur in the Planning Area but has a geospatial model predicting the possibility of its occurrence based on soil type and vegetative community (Maps SSS-11 and SSS-12). This model shows possible habitat in both units. In particular, these plant species would be most susceptible to management decisions regarding livestock grazing, recreation (including OHV riding), and vegetation treatments.

Livestock grazing has the potential to degrade vegetative communities over time. As grazers consume plants, depending on the time of year, they may be consuming flowers and/or seeds, thereby decreasing the fecundity of the community. Furthermore, increased grazing pressure can result in the trampling of vegetation and compaction of soils, making future plant growth more difficult. Open space could provide recruitment space for invasive/noxious plant species to grow, and, furthermore, livestock can serve as a vector for transport of these species (as well as native species). However, under all alternatives, grazing management would adhere to or move toward adherence to *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or to USFS desired conditions for rangelands that would reduce adverse impacts to special status plants from permitted livestock grazing. Potential ground-disturbing activities that could impact vegetation are presented in Section 3.18 (Tables VEG-1 through VEG-4). In general, the greatest potential impacts to special status plants would occur under Alternatives A, D, and E, while the fewest potential impacts would occur under Alternative B. Under Alternative C, management decisions would be driven based on monitoring efforts, where signs of degradation to vegetative communities may result in changes to management decisions. Under all action alternatives, there would be fewer acres available (BLM)/suitable (USFS) to livestock grazing than under Alternative A and additional land use plan direction addressing the potential impacts from livestock grazing on special status plants would be implemented, which would result in fewer potential impacts to special status plant species.

Recreational activities such as hiking and biking should have minimal impacts on vegetation when activities are confined to established trails. Trail use generally results in impacts to adjacent vegetation that in many cases would be considered temporary when nonnative plant species are controlled. OHV use could impact vegetation through plant mortality, crushing, and soil compaction, which over time could make re-establishment of vegetation difficult. As with the impacts associated with hiking, it would be expected that the majority of these impacts would be limited to areas in the immediate vicinity of established trails, confining impacts to specific areas within the Planning Area. In general, the largest area would be open to potential disturbances from recreational use under Alternatives A, D, and E and the smallest area would be open to these disturbances under Alternative B; however, under all action alternatives, potential disturbance to special status plant species from recreational use would be less than Alternative A. Under Alternative C, management decisions would be driven based on monitoring efforts, where signs of degradation to vegetative communities may result in changes to management decisions.

Vegetation treatments would generally be considered beneficial to special status plant species because treatments would focus on areas where invasive/noxious plants have significant coverage. Treatments would presumably open space for native seed growth, creating better habitats over the life of the plan. However, open space could be utilized by aggressive invasive/noxious plants; further discussion related to vegetation treatments under each alternative is presented in Section 3.18.

3.16. Social and Economic Considerations

As described in *Socioeconomics Baseline Report* (Appendix C of the AMS), the analysis area for the social and economic effects is San Juan County, Utah (Map SOC-1). The analysis area is economically tied to other counties in the surrounding area, but, given the scale of the social and economic effects in San Juan County estimated in this section, it is not likely that spillover effects into surrounding counties would be substantial relative to the scale of their existing economic and demographic characteristics. Comments received during public scoping and the effects analyses for other resources indicate that the primary social and economic concerns regarding the management of the BENM are related to recreation use. This section summarizes projected social and economic effects associated with the alternatives.

3.16.1. Affected Environment

Descriptions of the existing social and economic conditions in the analysis area are presented in the *Socioeconomics Baseline Report*, which is Appendix C of the AMS. That information is incorporated here by reference.

3.16.2. Environmental Consequences

Recreation-related economic effects were evaluated quantitatively using the IMPLAN model; social and economic effects related to cultural resources were evaluated qualitatively. Quantitative results for the recreation-related evaluations were analyzed in terms of average annual employment and the net present value of economic output—labor income or value added—over a 15-year period following the selection of the MMPs for the BENM. Additional information on the analysis can be found in Appendix N: Socioeconomics Analysis.

Currently, approximately 225,000 people visit the BENM annually, including an estimated 187,511 visits to the Indian Creek Unit and an estimated 36,994 visits to the Shash Jáa Unit (Appendix C in the AMS). For the purposes of the economic effects analysis, it is useful to convert these visits into visitor days because visitors who stay overnight spend more than 1 day in the area while day visitors may spend only a portion of the day in the area. Current visitation to the two units is estimated at 151,736 visitor days.

To estimate the potential visitation impacts, post-designation changes in visitation at five recently designated National Monuments were reviewed. Evidence from previous National Monument designations suggests that managing public land as a National Monument raises the profile of the area to potential visitors and increases visitation and visitor spending in the region (BBC 2016). Given considerable uncertainty regarding how each alternative would affect visitation, low, medium, and high visitation growth scenarios were developed. The low-growth scenario assumes that visitation in the BENM would continue to grow at rates similar to the growth observed prior to designation, which is approximately 3.1% per year (BLM 2016). Under the medium-growth scenario, visitation was projected to increase at 7.1% per year for the first 6 years following development of the MMPs before returning to the baseline 3.1% annual growth rate. Under the high-growth scenario, visitation was projected to increase at 15.5% per year for the first 6 years following development of the MMPs before returning to the baseline 3.1% annual growth rate. At the end of the 15-year analysis period, the projected number of annual visitor days ranges from approximately 240,000 visitor days under the low-growth scenario to between 301,000 and 475,000 visitor days for the medium- and high-growth scenario.

Under the low-growth scenario, recreation activity in the Indian Creek and Shash Jáa Units is projected to support an annual average of 95 local jobs over the 15-year period. The cumulative net present values of recreation-related labor income and economic output (sales) over the 15-year analysis period under the low-growth scenario are estimated at approximately $47 million and $111 million, respectively. The cumulative net present value of State and local tax revenues produced by recreation visits to the two units over the 15-year analysis period is projected to be approximately $7.2 million.

Under medium- and high-growth scenarios, average annual recreation-related employment is projected to increase to between 119 and 178 jobs. These scenarios are also projected to increase the net present value of labor income over the 15-year analysis period to between $57 million and $85 million and increase the net present value of recreation-related output (sales) to between $135 million and $202 million. The cumulative net present value of State and local tax revenues is projected to increase to between $8.7 million and $12.8 million. Given that future visitation projections are uncertain, Appendix N provides further information regarding the incremental regional economic and fiscal contributions from each 10,000 average annual visitor days at BENM.

The medium- and high-growth scenarios would be favorable as compared to the low-growth scenario in terms of non-market economic values. The aggregate economic benefit received by visitors (which is based on estimates of the consumer surplus associated with the activities they undertake during their visit and is distinct and separate from the trip expenditures discussed above) would increase correspondingly with higher visitation.

The BLM has identified and defined five categories of stakeholders for this EIS (see Appendix C in the AMS).

Habitat and resource conservation stakeholders: These stakeholders are likely to find Alternative A the least satisfactory of all the alternatives. These stakeholders would prefer any of the proposed action alternatives but would likely most prefer Alternative B, which would offer the most stringent protection of habitat and natural resources, and they would likely least prefer Alternative D and Alternative E, which could be seen as offering less assurance of future habitat and resource conservation.

Recreation stakeholders: These stakeholders are generally likely to support any of the action alternatives due to the potential improvements in access and recreation infrastructure. There may be a subset of these stakeholders that will be concerned about the additional popularity of the area that is likely to arise from the action alternatives and the potential for more crowding. Among the action alternatives, stakeholders purely focused on recreation opportunities would likely prefer Alternative D and Alternative E, which offer the most unlimited recreation access and opportunity, and would likely least prefer Alternative B, which is more restrictive in terms of recreation.

Mineral development and production stakeholders: These stakeholders may find any of the alternatives unsatisfactory because Proclamation 9558 withdrew all Federal lands within the BENM from location and entry under the Mining Law of 1872 and from the disposition of leasable and salable minerals under the Mineral Leasing Act of 1920 and all other applicable laws. Although there is little or no commercial development potential for mineral resources in the Planning Area, these stakeholders may be concerned about the precedent of applying additional management restrictions on Federal lands.

Visual resource stakeholders: These stakeholders are likely to be affected by the alternatives in much the same way as the habitat and resource conservation stakeholders.

Cultural resource stakeholders: These stakeholders are also likely to share similar effects from the alternatives with habitat and resource conservation stakeholders and visual resource stakeholders. While cultural resource stakeholders will find the additional protection of cultural sites under the action alternatives highly favorable, they may also be concerned about the likelihood for increased levels of visitation. Cultural resource stakeholders, including Tribes, could experience increased costs in terms of the time, money, and staffing resources needed to address increased visitation of cultural sites under all alternatives.

The socioeconomics analysis area was screened in the *Socioeconomic Baseline Report* (see Appendix C in the AMS) to identify communities with minority and low-income populations that qualify as potential environmental justice (EJ) populations based on guidance for EJ analysis from the Council on Environmental Quality. Most of the analysis area, including San Juan County as a whole and the portions of the county within the Navajo Reservation, was identified as having potential communities of concern from an EJ standpoint due to their large minority (American Indian) populations. EJ impacts would occur if any of those areas were to experience disproportionately high and adverse public health or environmental impacts from any of the management alternatives. Adverse impacts to cultural resources would also likely represent an EJ impact. However, none of the proposed action alternatives is anticipated to result in any adverse public health or environmental impacts. In fact, each of the action alternatives is likely to be more protective from a health and environmental standpoint than the continuation of current management under Alternative A. Because all alternatives would provide for the proper care and management of Monument objects and values, none of the proposed action alternatives would result in disproportionate impacts to EJ communities.

3.17. Travel and Transportation Management

As part of the land use planning process for the BENM, the BLM, with input from the public, would make OHV area designations. At the land use planning level, the BLM is required to designate all public lands as areas open, limited, or closed to OHVs, as defined in 43 CFR 8340.0-5. The designation of these areas would guide future implementation-level travel management planning for OHV use where agencies would designate travel routes within the Indian Creek and Shash Jáa Units. These designations are done outside of the management planning process through a site-specific implementation-level travel plan. Until an implementation-level travel management plan, emergency order, or other NEPA analysis is completed for the Shash Jáa and Indian Creek Units, all current implementation-level route designations within areas designated in the MMPs as OHV limited would remain in effect.

Similar to the BLM, the USFS designates areas as open or closed to OHV use. In areas that are open, the USFS designates routes and assigns a maintenance level. The maintenance level defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. USFS roads are assigned a maintenance level (ML) between 1 and 5, which defines the level of service provided by, and the maintenance required for, a specific road.

Recreational and other valid uses would be considered when considering changes to the open, closed, and limited travel designations. See Chapter 2 for route criteria to be implemented during travel management planning.

3.17.1. Affected Environment

The Planning Area is an internationally recognized recreation destination, and recreation visitors primarily drive the demand for the travel and transportation network. Outside of the State highways, the dominant transportation network users are recreational. There is also important demand from grazing operators, private landholders with inholdings, people accessing SITLA lands, and permitted uses with valid and existing rights. Demand for recreational access on the travel and transportation network is expected to continue to increase in the Planning Area. For additional context, see Section 2.17 of the AMS.

The analysis area for travel and transportation management, including area-level designations, is the Planning Area, because planning decisions supporting resources, objects, and values are limited to the same extent.

3.17.1.1. SHASH JÁA UNIT

On lands managed by the BLM, the MFO RMP designated 242 miles of travel routes that are now located within the Shash Jáa Unit:

- 23 miles of State and Federal highways
- 82 miles of maintained natural surface roads
- 135 unmaintained natural surface roads
- 2 miles of motorcycle and ATV routes

There are 90,268 acres designated as OHV limited, 6,943 acres closed to OHV use, and zero acres designated as open to OHV use.

On lands managed by the USFS, there are approximately 58 miles of travel routes within the Shash Jáa Unit. The number of miles of travel route per category is as follows:

- 0 miles of passenger vehicle (ML 3: Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car.)
- 45.67 miles of high clearance (ML 2: Assigned to roads open for use by high clearance vehicles; passenger car traffic is not a consideration.)
- 12.56 miles of closed (ML 1: Assigned to intermittent service roads; basic custodial maintenance is performed to keep damage to adjacent resource to an acceptable level and to perpetuate the road to facilitate future management activities.)

3.17.1.2. INDIAN CREEK UNIT

The Monticello RMP designated 199 miles of travel routes now located within the Indian Creek Unit:

- 22 miles of State and Federal highways and paved passenger roads to Canyonlands National Park
- 47 miles of improved roads
- 127 miles of primitive roads
- 3 miles of motorcycle and ATV routes

There is 64,811 acres designated as OHV limited, 6,909 acres closed to OHV use, and 0 acre designated as open to OHV use.

3.17.2. Environmental Consequences

Travel designations support resource programs and are designed to help achieve their objectives. The land use emphasis for each area guides travel designations. Consequently, the travel designations would adhere to the management prescriptions included under each alternative while following the theme of each alternative. Impacts result from resource allocations, management actions, and allowable use decisions. For example, a decision to close routes to protect wildlife habitat could impact recreation opportunities and wildlife habitat. In this case, the impacts of improved wildlife habitat and loss of recreation opportunity are from the wildlife or recreation decisions and are not a travel decision. Therefore, these types of travel-related impacts are discussed in Sections 3.11 and 3.20.

As required by executive order and regulation, the MMPs make area allocation travel management decisions only. The allocation travel management decisions for each alternative are shown in Table 2-12 and are summarized in Tables REC-2 through Table REC-4. As discussed in Chapter 2, the MMPs classify all BLM-administered lands as open, limited, or closed to OHVs and areas on USFS-administered lands as open or closed to OHVs. Route-by-route travel management decisions will be addressed in future implementation-level travel plan(s). Permitted and administrative access are not subject to OHV area designations and are not affected by the decisions in the MMPs. During future implementation-level planning, for BLM areas classified as limited or USFS areas designated as open, the implementation plan would designate allowable vehicle types and/or limitations for each route.

Travel planning within SRMAs would recognize San Juan County's OHV route system and integrate it to the extent possible in meeting travel management and recreational goals and objectives under all alternatives. This would provide benefits for users seeking OHV riding opportunities because it would provide OHV riders opportunities for unique riding experiences in areas identified as OHV limited while still meeting BLM and USFS goals and objectives for travel management and recreation. Impacts on other resources would be similar to those described throughout this document from OHV riding.

Additionally, under management actions common to all action alternatives, travel planning would take into consideration the Monument objects and values when determining which routes to designate, develop, and close. Specific route review during travel implementation allows for the identification of Monument objects that may have not been previously identified. This would bring more protection to those objects and values through route closure or route mitigation at the site-specific level, but it may result in some routes being closed or rerouted, or in restrictions being placed on their use during implementation-level travel management planning. All action alternatives would implement actions to reduce resource impacts and address the proper care and management of Monument objects and values compared to Alternative A (see Section 2.4.12.2).

3.18. Vegetation

Vegetation in the Planning Area provides benefits for wildlife and livestock such as forage and browse, cover, and nesting habitat for a variety of wildlife species including native pollinators and monarch butterflies. Vegetation also functions in the hydrologic cycle as a dynamic interface between the soil and atmosphere. It intercepts precipitation, retards overland flow, retains soil moisture and nutrients (root absorption), and transports water and nutrients back to the atmosphere via stems and leaves (evapotranspiration). Vegetation also contributes to Monument values such as aesthetic settings for visitors and opportunities for seed and pine nut collection and the collection of medicinal and ceremonial plants by Tribal members. Within the Planning Area, there are relict plant communities that provide the opportunity for comparative studies of pinyon-juniper woodland and sagebrush communities in other parts of the Colorado Plateau.

3.18.1. Affected Environment

Vegetation across the Planning Area was identified using land cover data developed by the Southwest Regional Gap Analysis Project (SWReGAP) (USGS National Gap Analysis Program 2004) and Vegetation Classification, Mapping, and Quantitative Inventory (VCMQ) imagery and spatial data (Nelson et al. 2015). Current GIS data divide vegetation communities into 10 land cover types: Aspen/Aspen-Mixed Conifer,

Agriculture, Conifer and Mountain Shrub, Desert Shrub, Treated Area[2], Invasive Species, Pinyon-Juniper and Gambel Oak Woodlands, Riparian and Wetland, and Sagebrush and Perennial Grasslands (Maps VEG-1 and VEG-2). Land cover types have been grouped into four major vegetation communities: Forested, Pinyon-Juniper and Gambel Oak Woodlands, Desert Shrub, and Sagebrush and Perennial Grasslands. Riparian and Wetland vegetation communities are discussed in AMS Section 3.11. Special status plant species with potential to occur in the Planning Area are discussed in AMS Section 3.14. Vegetation communities, vegetation management, and invasive and noxious weeds are discussed in more detail in the AMS, Sections 2.18 and 2.22, respectively.

3.18.1.1. VEGETATION COMMUNITIES

3.18.1.1.1. Forested

Mixed Conifer/Mountain Shrub and Aspen/Aspen-Mixed Conifer

Mixed Conifer and Mountain Shrub community types cover approximately 7,033 acres (3.1%) of the Planning Area. These communities are composed of ponderosa pine (*Pinus ponderosa*) and Douglas-fir (*Pseudotsuga menziesii*). Ponderosa pine typically grows in pure pine communities whereas Douglas-fir vegetation types typically have white fir (*Abies concolor*), ponderosa pine, and/or aspen (*Populus* spp.) intermixed. Associated shrub species include Gambel oak (*Quercus gambelii*), mountain mahogany (*Cercocarpus* spp.), bearberry (*Arctostaphylos uva-ursi*), creeping barberry (*Mahonia repens*), and other higher-elevation species. Within the Planning Area, the Mixed Conifer/Mountain Shrub community is relatively healthy and intact. Endemic (low) levels of insects and disease are present in this community. Insects (including Douglas-fir beetle and mountain pine beetle), disease, and fire have played a major role in maintaining the diversity of composition and structure of this community type.

Aspen and Aspen-Mixed Conifer community types are found on 159 acres (0.1%) of the Planning Area. This community is composed of quaking aspen (*Populus tremuloides*) and conifer species, including Douglas-fir, white fir, and spruce species (*Picea* spp.). Common shrubs include Saskatoon serviceberry (*Amelanchier alnifolia*), bigtooth maple (*Acer grandidentatum*), mountain snowberry (*Symphoricarpos oreophilus*), and Oregon boxleaf (*Paxistima myrsinites*). Within the Planning Area, the Aspen/Aspen-Mixed Conifer community is relatively healthy; however, the lack of disturbance has allowed the natural progression of aspen to succeed to conifers. Increases in the abundance and density of conifers make this vegetation community more susceptible to large-scale insect infestations, disease outbreaks, and severe wildland fires, possibly endangering overall forest ecosystem health (Hood and Miller 2007).

3.18.1.1.2. Pinyon-Juniper and Gambel Oak Woodlands

These woodlands, dominated by pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*), cover approximately 152,053 (66.5%) acres of the Planning Area. Pinyon pine is generally more abundant in stands at middle elevations where annual precipitation exceeds 15 inches. At lower elevations, juniper dominates most sites. Oak woodlands are dominated by Gambel oak. Common shrubs that may codominate this community include Saskatoon serviceberry, Utah serviceberry (*Amelanchier utahensis*), alderleaf mountain mahogany (*Cercocarpus montanus*), and antelope bitterbrush (*Purshia tridentata*). Unhealthy pinyon-juniper stands are evident in the Planning Area, especially on sites with shallow soils. In areas with deep soils, pinyon-juniper encroachment into sites that were historically Sagebrush or Mountain Shrub communities is continuing. Pinyon and juniper mortality in the Planning Area is attributed to the combination of drought, Ips beetle, and root disease.

3.18.1.1.3. Desert Shrub

The Desert Shrub vegetation community contains fourwing saltbush (*Atriplex canescens*), shadscale (*Atriplex confertifolia*), winterfat (*Krascheninnikovia lanata*), and blackbrush (*Coleogyne ramosissima*) in drier areas, with greasewood (*Sarcobatus vermiculatus*) dominating in wetter areas. The Desert Shrub vegetation community covers approximately 46,199 acres (20.2%) of the Planning Area. Within the

[2] The treated area community type includes areas where mechanical vegetation treatments have occurred, burned areas (both natural and prescribed) with subsequent seeding for revegetation purposes, and/or other types of vegetation manipulation where the area has not yet returned to natural conditions.

Planning Area, the Desert Shrub vegetation community is relatively healthy and intact; however, very low soil moisture and high soil salinity in this vegetation community limit its ability to recover following disturbance (AMS Section 2.18.3.2).

3.18.1.1.4. Sagebrush and Perennial Grasslands

The Sagebrush and Perennial Grassland vegetation community covers approximately 12,779 acres (5.6%) of the Planning Area. This vegetation community is composed of big sagebrush (*Artemisia tridentata*), black sagebrush (*Artemisia nova*), and antelope bitterbrush (*Purshia tridentata*). Dominant grass species depend on the soil, with species such as saltgrass (*Distichlis spicata*), galleta grass (*Pleuraphis jamesii*), squirreltail (*Elymus elymoides*), blue grama (*Bouteloua gracilis*), and western wheatgrass (*Elymus smithii*) occurring on heavy soils. Sandy sites usually support species such as Indian ricegrass (*Achnatherum hymenoides*), sand dropseed (*Sporobolus cryptandrus*), and needle-and-thread grass (*Hesperostipa comata*). Within the Planning Area, the Sagebrush and Perennial Grassland vegetation community is declining due to drought, insects (army cutworm), lack of seedling recruitment, off-road vehicle use, and pinyon-juniper encroachment, as well as invasive annuals such as cheatgrass and Russian thistle (*Salsola tragus*) (AMS Section 2.18.5.3.6).

3.18.1.2. INVASIVE AND NOXIOUS WEEDS

A weed is a plant that interferes with management objectives for a given area of land at a given point in time. A noxious weed is any plant designated by a Federal, State, or County government as injurious to public health, agriculture, recreation, wildlife, or property. Noxious weeds are capable of invading plant communities and replacing native species, particularly following a disturbance. Noxious weeds are designated and regulated by various State and Federal laws.

The State of Utah Commissioner of Agriculture and Food has designated 54 plant species as noxious weeds (State of Utah 2018b). The BLM also has developed a list of invasive weed species of concern. A systematic weed inventory has not been conducted for the Planning Area; however, there are known occurrences of field bindweed (*Convolvulus arvensis*), tamarisk (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), cheatgrass, Russian thistle, Russian knapweed (*Acroptilon repens*), and camelthorn in the Planning Area.

3.18.2. Environmental Consequences

3.18.2.1. ANALYSIS METHODS

This section analyzes and discusses impacts to vegetation and noxious and invasive weeds from management actions discussed in Chapter 2. For the purposes of this MMP/EIS, the primary indicator of impacts to vegetation is the acres of vegetation communities open to potential vegetation-disturbing activities due to management decisions related to OHV use, recreation, livestock grazing, woodland harvest, vegetation/fuels treatments, and seed collection. The number of acres open to potential vegetation-disturbing activities is also used as an indicator for the potential establishment and spread of noxious weeds. At the site-specific implementation level, any proposed vegetation-disturbing activities would be required to follow the BMPs outlined in Appendix I.

The analysis area for vegetation is the Planning Area, which covers approximately 228,794 acres and was selected because it includes all Monument land that would experience impacts from proposed management decisions. The temporal analysis area is the life of the plan. Based on past and current levels of vegetation treatments, this analysis assumes that over the life of the plan approximately 3,000 acres of vegetation treatments would be completed in the Shash Jáa Unit and approximately 2,000 acres of treatments would be completed in the Indian Creek Unit on BLM-administered land. Most of the vegetation treatments are expected to remove invasive Russian olive and tamarisk.

3.18.2.2. DIRECT AND INDIRECT IMPACTS

Lands and realty management decisions that have the potential to impact vegetation would result from authorizations of ROW grants and the expansion or development of transportation and utility corridors. These actions would create surface disturbances of various magnitudes depending on the size and location of the project. Impacts from lands and realty projects on vegetation could include crushing or trampling,

removal of plants, increased fugitive dust, and the introduction of noxious and invasive weeds. Some impacts would be mitigated through BMPs, noxious weed controls, and restoration and rehabilitation measures. Areas identified as avoidance or exclusion for ROWs would reduce the risk of crushing or removal of vegetation and the introduction and spread of noxious and invasive weeds and fugitive dust. Exclusion areas would offer greater protections for vegetation than avoidance areas because they would completely preclude surface-disturbing activities. Under Alternative B, the greatest number of acres would be excluded from ROW projects. Under Alternative A, the greatest number of acres would be open to ROW projects. The number of acres of vegetation types within the Planning Area that are ROW open, exclusion, or avoidance areas by alternative are presented in Table VEG-1. In general, all action alternatives would result in less potential for surface disturbance affecting vegetation than Alternative A and reduce impacts on vegetation by including more management actions addressing potential impacts to vegetation and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.13.2).

Livestock grazing management decisions could result in the selective removal of native perennial grasses, soil compaction and increased erosion, contamination of surface disturbances of adjacent water bodies in areas of livestock concentration, trampling of vegetation, and the potential spread of noxious weeds and other invasive species through equipment and feed products and by livestock themselves. Under all alternatives, livestock grazing would be managed to meet or make progress toward Utah Rangeland Health Standards (BLM 1997) or USFS desired conditions for rangelands, which would mitigate those risks. However, the potential for impacts would be greater under alternatives with a higher percentage of lands available (BLM)/suitable (USFS) for grazing. Under Alternative A, the greatest number of acres would be available (BLM)/suitable (USFS) for livestock grazing and the fewest acres would be unavailable (BLM)/not suitable (USFS). Under Alternative B, the fewest acres would be available (BLM)/suitable (USFS) for livestock grazing and the greatest number of acres would be unavailable (BLM)/not suitable (USFS); large portions of the Indian Creek Unit would only be available for livestock trailing. The number of acres of vegetation types available (BLM)/suitable (USFS) and unavailable (BLM)/not suitable (USFS) for livestock grazing varies by alternative and is presented in Table VEG-2.

Areas closed to OHV and mechanized travel would reduce risk of fugitive dust and crushing or trampling vegetation on the closed roads and trails, thereby encouraging revegetation. Areas designated as OHV limited would have the potential to increase unauthorized OHV use off designated routes with subsequent impacts to vegetation. Additionally, OHV use increases the risk of introducing noxious and invasive weeds. Table VEG-3 shows the proposed travel management decisions, by alternative, within the Planning Area. Under Alternative B, the largest number of acres would be closed to OHV travel and the fewest acres would be designated as OHV limited. Under Alternatives A, C, D, and E, more areas would be designated as OHV limited and fewer areas would be designated as OHV closed.

Impacts from recreation activities on vegetation could include crushing or trampling, removal of plants, increased fugitive dust, and the introduction of noxious and invasive weeds from activities such as dispersed camping, collection of dead wood for campfires, and cross-country hiking. Where recreation is managed using an SRMA, ERMA, RMZ, or other special designation on BLM- or USFS-administered lands, rules and guidelines would limit or control activities through specialized management tools such as designated campsites, permits, area closures, and limitations on number of users, duration of use, and types of events. Under Alternatives A, D, and E, fewer restrictions would be placed on dispersed camping in SRMAs and RMZs compared with Alternative B. Under all alternatives, dispersed recreation use would be limited where the riparian areas are being unacceptably damaged.

Impacts from seed collection and woodland harvest activities on vegetation would be similar and could include crushing or trampling, removal of plants, increased fugitive dust, and changes in habitat structure or composition due to the introduction and spread of invasive and weedy plant species. Alternative A would have the least restrictions on private and commercial seed gathering and plant collection compared with Alternatives B, C, D, and E. Under Alternatives B, C, D, and E, the entire Monument or certain localities may be closed to seed gathering dependent upon annual seed production of native plants. However, private seed gathering and plant collection would be allowed for American Indian traditional, medicinal, and ceremonial purposes only. Under Alternative B, the smallest area would be open to woodland harvest and the largest

area would be closed to woodland harvest. The number of acres open and closed to woodland harvest are shown in Table VEG-4. Under Alternative A, access within 150 feet of designated routes in Harts Draw for woodland harvest would be allowed; Alternative C would be similar except access off designated routes would be permitted on a case-by-case basis. Under Alternative B, access off designated routes for permitted woodland harvest would be prohibited. Access within 150 feet of designated routes for permitted woodland harvest could occur under Alternative D. Alternative E would allow access off designated routes for permitted woodland harvest if consistent with the objects and values of the Monument. All action alternatives would reduce impacts from access for permitted woodland harvest because the site-specific environmental reviews would be conducted prior to permitting such access, and access that would not be consistent with the proper care and management of Monument objects and values would not be permitted.

Under fire management and vegetation management, fuels treatments and vegetation treatments are focused on the DWFC of restoring VCC regimes to ecosystems when feasible. Under all alternatives, the existing level of vegetation treatments would be maintained and would primarily focus on the removal of tamarisk, Russian olive, and juniper and treatment of noxious and invasive weed species. These actions would reduce opportunities for the spread of weeds and exotic, invasive species into native vegetation communities. These projects create environmental site conditions that promote understory restoration through the germination and establishment of grasses, forbs, and shrubs. Fuels and vegetation management treatments such as prescribed fire, mechanical and manual treatments, chemical or biological vegetation control, and aerial/ground seeding would reduce competition from invasive species, assuming that a diverse native vegetation community has the potential to establish in the area. The short-term impacts of fuels management actions on vegetation would include the unavoidable potential trampling and disturbance of native species. These actions could result in a short-term reduction of native species diversity. However, these treatments would improve vegetation communities in the long term once native vegetation is reestablished by creating greater species diversity and habitat structure, multiple age classes, and openings for forbs and woody species recruitment.

The introduction and spread of noxious and invasive weed species is a concern for the agencies because there are many ways weeds can be introduced to or spread through an area. Management decisions common to all alternatives provide for minimizing the introduction and spread of noxious and invasive weeds by requiring use of certified weed-seed-free feed for pack and stock-riding animals and for certified weed-free mulch and seed for vegetation restoration and rehabilitation projects. Power-washing equipment used for permitted and administrative activities is another management decision common to all alternatives and would minimize the introduction of weed species. The potential impacts from these decisions are that outfitter guides and recreational pack and stock owners may pay a higher price for weed-seed-free feed, and vegetation rehabilitation project costs may be higher due to the purchase of weed-free seed and mulch. The agencies would require close oversight of permitted or administrative projects to ensure that equipment is power-washed before it arrives at a site. The overall benefits gained from these decisions would minimize and, in some cases, eliminate the introduction and spread of noxious and invasive weed species.

Table VEG-1. Proposed Rights-of-Way Decisions within the Planning Area by Alternative

Vegetation	Alternative A			Alternative B			Alternative C			Alternative D			Alternative E		
	Open (acres)	Avoidance (acres)	Exclusion (acres)	Open (acres)	Avoidance (acres)	Exclusion (acres)	Open (acres)	Avoidance (acres)	Exclusion (acres)	Open (acres)	Avoidance (acres)	Exclusion (acres)	Open (acres)	Avoidance (acres)	Exclusion (acres)
Aspen/Aspen-Mixed Conifer	160	0	0	0	0	160	0	0	160	0	160	0	0	160	0
Desert Shrub	24,553	14,503	11	0	0	38,728	0	4,418	34,275	12,409	26,284	<1	12,409	26,284	<1
Mixed Conifer and Mountain Shrub	6,744	11	183	0	0	6,938	0	265	6,674	317	6,478	143	317	6,478	143
Pinyon-Juniper and Gambel Oak	107,036	17,900	12,053	0	0	136,657	0	33,535	103,055	45,430	80,213	10,936	45,430	80,213	10,936
Riparian and Wetland	1,694	3,526	60	0	0	5,106	0	1,110	3,977	553	4,476	57	553	4,476	57
Sagebrush and Perennial Grassland	9,587	1,189	249	0	0	11,026	0	4,487	6,565	5,452	5,331	240	5,452	5,331	240
TOTAL	**149,773**	**37,128**	**12,557**	**0**	**0**	**198,614**	**0**	**43,815**	**154,705**	**64,161**	**122,942**	**11,377**	**64,161**	**122,942**	**11,377**

Table VEG-2. Proposed Livestock Grazing Decisions within the Planning Area by Alternative

Vegetation	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)
Aspen/Aspen-Mixed Conifer	160	0	160	0	160	0	160	0	160	0
Desert Shrub	38,473	227	19,120	19,576 (10,752 acres are limited to trailing only)	38,473	227	38,473	227	38,473	227
Mixed Conifer and Mountain Shrub	6,828	111 (3 acres are limited to trailing only)	5,761	1,178 (206 acres are limited to trailing only)	5,902	1,038 (3 acres are limited to trailing only)	5,902	1,038 (3 acres are limited to trailing only)	5,900	1,038 (3 acres are limited to trailing only)
Pinyon-Juniper and Gambel Oak	125,607	11,049 (259 acres are limited to trailing only)	77,158	59,432 (30,966 acres are limited to trailing only)	123,053	13,604(252 acres are limited to trailing only)	123,068	13,588 (236 acres are limited to trailing only)	122,973	13,617 (236 acres are limited to trailing only)
Riparian and Wetland	4,704	383 (100 acres are limited to trailing only)	2,219	2,868 (961 acres are limited to trailing only)	4,685	402 (100 acres are limited to trailing only)	4,706	380 (79 acres are limited to trailing only)	4,706	382 (79 acres are limited to trailing only)

Vegetation	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/not suitable for grazing (acres)	Areas available/ suitable for grazing (acres)	Areas unavailable/ not suitable for grazing (acres)
Sagebrush and Perennial Grassland	10,705	320 (15 acres are limited to trailing only)	6,183	4,841 (3,256 acres are limited to trailing only)	10,702	323 (15 acres are limited to trailing only)	10,705	321 (12 acres are limited to trailing only)	10,704	321 (12 acres are limited to trailing only)
TOTAL	**186,477**	**12,090 (377 acres are limited to trailing only)**	**110,601**	**87,895 (46,141 acres are limited to trailing only)**	**182,974**	**15,593 (370 acres are limited to trailing only)**	**183,014**	**15,554 (330 acres are limited to trailing only)**	**182,916**	**15,585 (330 acres are limited to trailing only)**

Note: Barren/sparse vegetation, invasive species and noxious weeds, treated vegetation, and areas covered by water or agriculture were not included in this table because they would not be adversely impacted by livestock grazing, as they are either lacking vegetation or are already altered from natural conditions.

Table VEG-3. Proposed Travel Management Decisions within the Planning Area by Alternative

Vegetation	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	OHV Closed (acres)	OHV Limited (acres)	OHV Closed (acres)	OHV Limited (acres)	OHV Closed (acres)	OHV Limited (acres)	OHV Closed (acres)	OHV Limited (acres)	OHV Closed (acres)	OHV Limited (acres)
Aspen/Aspen-Mixed Conifer	79	80	79	80	79	80	79	80	79	80
Desert Shrub	405	38,236	27,341	11,359	405	38,236	405	38,236	405	38,236
Mixed Conifer and Mountain Shrub	1,898	5,036	1,967	4,971	1,898	5,036	1,898	5,036	1,898	5,036
Pinyon-Juniper and Gambel Oak	22,573	113,778	80,699	55,887	22,573	113,778	22,573	113,778	22,573	113,778
Riparian and Wetland	178	4,896	2,466	2,621	178	4,896	178	4,896	178	4,896
Sagebrush and Perennial Grassland	426	10,580	3,919	7,104	426	10,580	426	10,580	426	10,580
TOTAL	**25,559**	**172,606**	**116,470**	**82,021**	**25,559**	**172,606**	**25,559**	**172,606**	**25,559**	**172,606**

Table VEG-4. Areas Open and Closed to Woodland Harvest within the Planning Area by Alternative

Area	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Areas open to woodland harvest (acres)	82,728	51,751	71,678	71,678	82,728
Areas closed to woodland harvest (acres)	118,981	149,959	130,031	130,031	118,981

3.19. Visual Resource Management and Night Skies

The BENM is an internationally recognized destination due to its uniquely scenic topography, geology, vegetation, cultural history, and related recreation and tourism opportunities. It is valued internationally as a destination for encountering exceptionally high-quality dark skies. For the purposes of visual resource management, *visual resources* are defined as the visible features of the landscape. *Scenic quality* is the measure of the visual appeal of a unit of land. Visual resources of BENM are managed through the BLM VRM system and USFS Scenery Management System (SMS) (USFS 1995). The current Manti-La Sal LRMP is based on the precursor to SMS, the Visual Management System.

The qualitative and quantitative indicators and measures focus on determination and disclosure of impacts to scenery and impacts to viewers. The BLM VRI (BLM 2018e) and USFS VRI (USFS 2018) provide baseline support of these indicators and measures. The BLM VRI fieldwork was completed in 2012, and the VRI documentation for the BLM and USFS was completed in 2018. The BLM scenic quality ratings and USFS scenic attractiveness classes are the bases for determining impacts to scenery in the analysis area. The BLM sensitivity levels and distance zones and USFS user concerns and distance zones are the bases for determining impacts to people in the analysis area. Appendix R describes the scenic character of the USFS-administered lands within the BENM to support the SIOs described in this section.

The analysis area for visual resources is the Planning Area and the 15-mile background distance zone of the VRM and SMS (Map VRM-1). The analysis area is multi-jurisdictional, where lands managed by the BIA, BLM, NPS, USFS, Utah SITLA, and private landowners may experience observable changes to the characteristic landscape of the Planning Area.

3.19.1. Affected Environment

Visual resources are one of key values for which the Monument is managed. The twin buttes known as Bear Ears are so visually recognizable that the native languages of the region gave them that name. The analysis area's landscape character and sense of place are defined by the landforms, vegetation, water, and cultural features of the Colorado Plateaus Province, Northern Canyon Lands section (Fenneman 1931). The characteristic landscape consists of steep, sheer-walled canyons, labyrinthine canyons, canyonlands, hoodoos, low plateaus, mesas, buttes, and badlands. Color values range from muted reds, tans, olives, and creams in the lower elevations to strong reds, browns, purples, jades, dark olives, sap greens, and whites on the canyon walls and in riparian vegetation and high-country forests. The analysis area's scenic landforms include the Bears Ears, North and South Six Shooter Peaks, Bridger Jack Mesa, Lavender Mesa, Arch Canyon, the Comb Ridge escarpment, Butler Wash, and the north and south forks of the 500-foot-deep Mule Canyon, with its alternating layers of red and white sandstone. Elevation ranges from 4,100 feet to over 9,000 feet. Diverse vegetation communities and types contribute substantially to scenic quality (see Section 3.18 and Appendix R). Cultural features in the analysis area consist of abundant rock writing sites, sheltered cliff dwellings, and other archaeological sites, including House on Fire (see Section 3.5). Some American Indian Tribes also identify dark night skies, the moon and stars, and visual resources as cultural resources and TCPs. Cultural resources are addressed in Section 3.5. Scenery-related recreation opportunities (see Section 3.11) are vital to tourism, the economy, and human well-being. Viewer populations range from international to local, including Blanding, Moab, Monticello, and native communities. Several Canyonlands National Park and Utah State Park campgrounds and Windwhistle Campground are sensitive day and nighttime receptors in the analysis area. Designated roads with scenic viewing opportunities include Indian Creek State of Utah Scenic Byway (SR-211), Elk Ridge Road Scenic Backway, Utah State Route 95 State of Utah Scenic Byway, Needles Overlook Road State of Utah Scenic Backway (SR-133), and numerous OHV routes.

The BLM VRI scenic quality evaluations, sensitivity level analyses, and delineation of distance zones combine to develop VRI classes. USFS-inventoried scenic attractiveness, user concern, distance zones, and existing scenic integrity (ESI) portray SMS values (Maps VRM-1 through VRM-4). Table VRM-1 summarizes the acreages and percentages of the analysis area categorized into BLM and USFS VRI elements. VRI classes and ESI classes represent the relative value of visual resources; VRI Classes I and II and ESI Classes ranked Very High and High are the most valued. The analysis area is predominantly VRI Class I and Class II, and USFS existing scenic integrity is high and moderate. Scenic quality and scenic attractiveness in the

analysis area are predominantly Class A and Class B (highest ratings). Sensitivity levels are high, and user concern is rated Level I and Level II (highest ratings). Distance zone visibility consists of immediate foreground, foreground, and middleground viewing situations. Stationary and linear key observation points (KOPs) are inherent throughout the analysis area on roads, trails, overlooks, pullouts, trailheads, climbing areas, campgrounds, and cultural sites.

Although local communities and energy developments contribute "light domes" (artificial sky glow) visible along the horizon from most viewing locations, uncommonly dark overhead skies prevail throughout the analysis area, and attract a local, regional, and international following of stargazers, astronomers, and those seeking remote landscapes. Recent Sky Quality Meter (SQM) values for BENM are in the range of values for a natural, unpolluted starry sky (Dark Skies Awareness 2017). The March 2017 SQM readings are published (Ogden Valley International Dark-Sky Association Chapter 2017), and mitigation steps are in-progress for unshielded agency lighting situations (NPS 2017).

Table VRM-1. Visual Resources in the Analysis Area

BLM								
BLM Scenic Quality Classes	**Class A**		**Class B**		**Class C**			
	Acres	**%**	**Acres**	**%**	**Acres**	**%**		
	814,039	51	560,660	35	221,085	14		
BLM Sensitivity Levels	**High**		**Medium**		**Low**			
	Acres	**%**	**Acres**	**%**	**Acres**	**%**		
	893,323	56	520,343	33	157,542	11		
BLM Distance Zones	**Foreground-Middleground**		**Background**		**Seldom Seen**			
	Acres	**%**	**Acres**	**%**	**Acres**	**%**		
	1,547,403	98	22,885	2	1,428	<1		
BLM VRI Classes	**VRI Class I**		**VRI Class II**		**VRI Class III**		**VRI Class IV**	
	Acres	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**
	154,603	10	899,408	57	300,906	19	216,799	14
USFS								
USFS Scenic Attractiveness Classes	**Class A**		**Class B**		**Class C**			
	Acres	**%**	**Acres**	**%**	**Acres**	**%**		
	184,881	50	177,964	48	5,258	2		
USFS Concern Levels	**High**		**Medium**		**Low**			
	Acres	**%**	**Acres**	**%**	**Acres**	**%**		
	310,987	85	9,900	3	44,314	12		
USFS Distance Zones	**Foreground**		**Middleground**		**Background**		**Seldom Seen**	
	Acres	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**
Concern Level 1	54,136	17	151,332	49	62,541	20	42,978	14
Concern Level 2	3,893	30	6,007	46	3,091	24	0	0
Existing Scenic Integrity	**Very High**		**High**		**Medium**		**Low**	
	Acres	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**
	86,170	23	146,484	40	123,469	34	12,084	3

3.19.2. Environmental Consequences

3.19.2.1. ANALYSIS METHODS

Determination and disclosure of potential effects caused by the alternatives to visual resources and night skies involve the analysis of qualitative and quantitative changes to the characteristic landscape and night skies. Estimations of impacts to scenery and impacts to people/viewers are based on comparisons of alternatives with the existing characteristic landscape, as documented according to BLM and USFS VRIs, including scenic quality (BLM-administered lands), scenic attractiveness (USFS-administered lands), sensitivity levels (BLM-administered lands), user concern (USFS-administered lands), and distance zones (BLM-

administered lands and USFS-administered lands). The SQM measurements for night skies are ongoing in the region.

The existing characteristic landscape of the Planning Area is defined by the forms, lines, colors, and textures associated with landforms, vegetation, and structures (includes cultural artifacts, recreation facilities, roads, and trails). Activities that potentially disturb or enhance the character of landforms, vegetation, and/or structures are managed through BLM RMP VRMs and USFS LRMP scenic integrity objectives (SIOs) based on resource management decisions, Special Area designations, and VRI classes. BMPs and stipulations (see Chapter 2 and Appendices I and J) provide future requirements to minimize impacts and require reclamation, restoration, and rehabilitation to enhance natural and historical scenic values that have been negatively altered.

Surface-disturbing and surface use activities may change the existing character of the landscape, decrease VRI values, and degrade SQM values. Conversely, RMP and LRMP decisions that raise the level of management objectives (e.g., Class I to Class II, or Very High to High) may preserve or retain VRI values over time. Effects on visual resource values may result from actions needed to manage other resources and uses. Visual contrast rating methods are documented in the BLM VRM System and applied prior to project-level authorization of any surface-disturbing activity. Typical factors contributing to visual contrasts and sources of light may include unshielded lighting; vegetation management activities, including restoration operations, prescribed fires, and thinning; road, trail, and parking construction and maintenance; recreation and tourism activities, including recreational vehicle and OHV use, parking, hiking, hunting, camping, picnicking, and rock climbing; and cultural site visitation.

Impacts to scenery and people would result if any of the following occur due to a management activity:

- Visually obvious degradation of a scenic landscape. Stronger impacts would result in higher quality landscapes in the immediate foreground and foreground.
- Dominant visual changes in the landscape that would be seen from highly sensitive or moderately sensitive viewer locations or locations with special scenic, historic, recreational, cultural, archaeological, and/or natural qualities that have been recognized through official declaration.

Impacts to scenery are based on estimated comparisons of management activities with existing scenic quality ratings. The ratings are quantitative scores based on qualitative criteria associated with landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications (Table VRM-2).

Table VRM-2. Landscape Scenery Impacts

Scenic Quality/ Attractiveness	RMP Visual Change to the Characteristic Landscape			
	VRM Class I/SIO Very High	VRM Class II/SIO High	VRM Class III/SIO Medium	VRM Class IV/SIO Low
Class A	Very limited	Low	High	High
Class B	Very limited	Low	Moderate	High
Class C	Very limited	Low	Low	Moderate

Sensitive viewers' impacts are determined based on the comparison of change caused by the RMP decisions (activities) with sensitivity/user concern levels, distance zones (0 to 0.5 mile, 0.5 to 5 miles, and greater than 5 miles) (Table VRM-3).

Table VRM-3. Sensitivity Level and User Concern Impacts

Visibility/Distance	RMP Visual Change to the Characteristic Landscape			
	VRM Class I/SIO Very High	VRM Class II/SIO High	VRM Class III/SIO Medium	VRM Class IV/SIO Low
High Sensitivity Level/User-Concern Impacts				
0–0.5 mile	Very limited	Low	High	High
0.5–5 miles	Very limited	Low	Moderate	Moderate
Greater than 5 miles	Very limited	Low	Low	Low
Medium Sensitivity Level/User-Concern Impacts				
0–0.5 mile	Very limited	Low	High	Moderate
0.5–5 miles	Very limited	Low	Moderate	Low
Greater than 5 miles	Very limited	Low	Low	Low

3.19.2.2. DIRECT AND INDIRECT IMPACTS

Table VRM-4 compares how lands in the Planning Area would be managed and the acreages that would provide the respective viewer and landscape scenery impacts that are shown in Tables VRM-2 and VRM-3, above. Please see Maps 2-31 through 2-39 for BLM VRM and USFS SIO classes for Alternatives A, B, C, D, and E (including USFS Visual Quality Objectives for Alternative A). In general, all action alternatives would result in less potential for surface disturbance or other activities that could affect visual resources than Alternative A and include more management actions addressing potential impacts to visual resources and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.14.2).

Alternative A impacts of VRM Class III and Class IV designations on VRI factor values (scenic quality, sensitivity levels, distance zones, and VRI Classes) are disclosed in Table VRM-5. Alternative A areas managed under the VRM Class I objective would have long-term, protection-related, beneficial impacts on scenery and viewers because scenic quality would be preserved or retained. Areas managed under the VRM Class II objective would have long-term, protection-related, minimal impacts on scenery and viewers because any changes to the characteristic landscape would be limited. Areas managed under VRM Class III objectives would have the potential to create adverse impacts on scenery and viewers because changes to the characteristic landscape could be moderate. VRM Class IV areas would be managed for lower-level protection of scenic quality and more area would be open for potential surface disturbance–related characteristic landscape degradation.

Under Alternative B over the life of the RMP the largest acreages within the Planning Area would be managed under VRM and SIO objectives that maintain VRI and existing scenic integrity values. Note that Alternative C management objectives are intended to be responsive on a case-by-case basis and may adjust through an LUP amendment to landscape conditions over time. Under Alternative A, the least acreage would be managed under VRM and SIO objectives that maintain VRI and existing scenic integrity values. Under all of the action alternatives (B through E), the entire Monument would be managed at VRM Class I/SIO Very High or VRM Class II/SIO High, which would preserve or retain the VRI values of the Monument's relatively pristine visual resources over the life of the RMP.

Exceptions to these VRM requirements would be allowed for construction of recreational infrastructure under Alternatives C, D, and E. This could reduce scenic quality in specific recreation sites where facilities are required (developed campgrounds, kiosks, boat ramps, etc.) This would result in localized visual impacts; however, those impacts would be in locations where such structures are expected by the viewer. These visual impacts would not occur under Alternative B.

For lands outside of the Monument, VRI Scenic Quality Class A landscapes occupy the immediate foreground and foreground to middleground of the Indian Creek Unit on the north and surround the majority of the Shash Jáa Unit. Additionally, VRI High Sensitivity Level /User Concern I activity areas occupy viewsheds in the immediate foreground of the Indian Creek Unit and the northern, western, and southern viewsheds of the Shash Jáa Unit. Impacts to people in those high sensitivity/concern areas and highest-quality scenic landscapes would be identical by alternative as those described for BLM-administered and USFS-administered lands within the Monument (see previous paragraph). These impacts would also apply to privately owned lands or Utah SITLA jurisdictions within the Monument. Similarly, NPS administered lands surrounding the Planning Area in the immediate foreground, foreground, and middleground would maintain these same BENM scenic quality values.

Management actions common to all action alternatives include specific BMPs (See Appendix I) for reclamation, restoration, and rehabilitation of existing disturbed landscapes and requirements to minimize impacts to night skies. The BMPs for reclamation, restoration, and rehabilitation would substantially reduce immediate foreground and foreground to middleground impacts to scenery and impacts to people in the analysis area over the life of the RMP. The BMPs for night skies would limit light domes from potential artificial light sources and reduce impacts to night skies over the life of the RMP. This, combined with the relatively low amount of potential development that would be allowed in the Monument, would reduce potential night sky impacts to a negligible level.

Table VRM-4. VRM, VMS and SIO Management (acres)

Class	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
VRM Class I/VMS VQO Preservation for Alternative A (No Action) or SMS SIO Very High (Alternatives B, C, and D)	13,933	108,917	27,204	12,277	25,046
VRM Class II/VMS VQO Retention for Alternative A (No Action) or SMS SIO High (Alternatives B, C, and D)	76,142	92,793	174,506	189,432	176,663
VRM Class III/VMS VQO Partial Retention for Alternative A (No Action)	77,147	N/A	N/A	N/A	N/A
VRM Class IV/VMS VQO Modification for Alternative A (No Action)	38,880	N/A	N/A	N/A	N/A

Table VRM-5. VRM Class III and Class IV Designations Effects

VRM RMP Alternative A†		Visual Resource Inventory Class Designations*																										
		VRI I									VRI II									VRI III								
		Scenic Quality Rating (acres)			Sensitivity Rating (acres)			Distance Zones (acres)			Scenic Quality Rating (acres)			Sensitivity Rating (acres)			Distance Zones (acres)			Scenic Quality Rating (acres)			Sensitivity Rating (acres)			Distance Zones (acres)		
Alternative A (No Action)	Acres	A	B	C	High	Med	Low	F/M	B	SS	A	B	C	High	Med	Low	F/M	B	SS	A	B	C	High	Med	Low	F/M	B	SS
VRM Class I	13,933	10,853	1,756	0	12,610	0	0	12,602	0	0	1,321	3	0	1,324	0	0	1,308	0	0	0	0	0	195	0	0	0	0	0
VRM Class II	71,414	1			1	0	0	1	0	0	52,546	18,867	0	71,413	0	0	71,249	0	0	0	0	0	0	0	0	0	0	0
VRM Class III	66,710	126	70		195	0	0	0	0	0	53,029	14,486	0	66,027	<1	0	66,341	0	0	0	6	0	0	6	0	6	0	0
VRM Class IV	16,722	<1	<1		<1	0	0	<1	0	0	14,744	1977	0	16,729	<1	0	16,695	<1	0	0	0	0	0	0	0	0	0	0
Total	**168,779**	**10,980**	**1,826**	**0**	**12,806**	**0**	**0**	**12,603**	**0**	**0**	**121,640**	**35,333**	**0**	**155,493**	**0**	**0**	**155,593**	**0**	**0**	**0**	**6**	**0**	**195**	**6**	**0**	**6**	**0**	**0**

* There are no effects to areas designated VRI IV.

† Alternative A includes VRM Class III and IV management objectives where allowable land disturbances are moderate to high. Alternatives B, C, D, and E allow only unnoticeable to very limited disturbance.

3.20. Wildlife and Fisheries

Except for species listed under the ESA, the UDWR manages wildlife populations in the Planning Area, including establishing management goals and objectives. The BLM and USFS manage wildlife habitats that occur on public lands and coordinate closely with the UDWR on issues related to wildlife habitat management.

The analysis area for wildlife and fisheries varies by species. For big game species, the analysis area is the extent of the UDWR-delineated hunting management units crossed by the Planning Area. For fisheries and species without delineated habitats, the analysis area includes the extent of the HUC 10 watersheds present within BENM. For the Indian Creek Unit, this includes the Indian Creek, Harts Draw, and Salt Creek watersheds. For the Shash Jáa Unit, this includes the Comb Wash, Cottonwood Wash, Dark Canyon, Grand Gulch, Lime Creek, and White Canyon watersheds (Map RIP-3). The analysis areas were selected because they represent the areas within which changes to wildlife and fisheries populations could be observed as a result of management changes in the Planning Area.

Indicators used to evaluate the existing condition and potential impacts on wildlife and fisheries include population numbers (estimates), acreage of habitat types present, and acreage of habitat open/closed to potential surface-disturbing activities.

3.20.1. Affected Environment

The Indian Creek and Shash Jáa Units are within the Colorado Plateau Province and contain an array of habitats and unique landforms and formations supporting an equally varied assemblage of wildlife and fish. Wildlife within the Indian Creek and Shash Jáa Units broadly includes game species, including mule deer (*Odocoileus hemionus*), Rocky Mountain elk (*Cervus elaphus nelsoni*), black bear (*Ursus americanus*), and mountain lion (*Puma concolor*); upland game birds; neotropical migratory birds; waterfowl; raptors; reptiles; amphibians; fish; macroinvertebrates; and other non-game, small animal species. These species, including habitat preference and current populations, are discussed in detail in Section 2.21 of the AMS, which further identifies and discusses species that inhabit the Indian Creek and Shash Jáa Units. Some American Indian Tribes also identify some wildlife species as cultural resources. Cultural resources are addressed in Section 3.5. The Planning Area is largely undeveloped; therefore, habitats that support wildlife and fish are relatively undisturbed. The Planning Area's undeveloped qualities play an important role in maintaining landscape intactness and connectivity for wildlife. Past and current impacts to fish and wildlife populations within the Planning Area include regular climactic variation and extreme weather events; recreation, including camping and hiking; development of roads and OHV use; livestock grazing management; vegetation management; and impacts related to noise from anthropogenic sources. Wildlife within the Planning Area can be grouped by guild based on their response to these disturbances; the impacts from management actions are expected to be similar throughout a guild.

For the purposes of this analysis, the guilds that are discussed include big game species, migratory birds, and fish. Although other wildlife is present throughout the Planning Area, potential impacts on these species can be inferred based on these guilds.

3.20.1.1. BIG GAME

Big game species are managed by the UDWR. The UDWR has delineated both substantial and crucial summer, winter, and year-round habitats for these species throughout the Planning Area. Big game seasonal movements in Utah include both standard and elevational migrations; however, the UDWR has not yet mapped migration corridors within the Planning Area. Table WILD-1 and Maps WILD-1 through WILD-9 present the big game habitats identified by the UDWR in the Planning Area as well as the analysis area, which includes UDWR hunting management units that cross the Planning Area.

The vegetation types present in the Planning Area (see Section 3.18) provide habitat for other wildlife, including migratory birds. Riparian areas within the Planning Area are presumed to provide habitat for amphibians. The BLM and USFS have responsibilities to assess the impact of their actions on migratory birds protected under the MBTA. These responsibilities are outlined in Executive Order 13186. In accordance with these responsibilities, the Utah Partners in Flight (PIF) Priority Species List (Parrish et al. 2002) and the USFWS Birds of Conservation Concern (BCC) list for Region 16 (USFWS 2008) (Colorado

Plateau) were used to prioritize species that could use habitats in the Planning Area. Table WILD-2 lists the BCC and PIF species that may occur within the Planning Area.

Table WILD-1. Big Game Habitat within the Planning Area

Species/Habitat Type	Planning Area	Analysis Area	Percentage of Habitat within Planning Area
Mule deer			
Area of crucial spring/fall habitat (acres)	20,707	263,030	8%
Area of crucial summer habitat (acres)	14,722	337,423	4%
Area of crucial winter habitat (acres)	122,735	1,001,677	12%
Area of substantial winter habitat (acres)	37,955	406,481	9%
Area of substantial year-long habitat (acres)	0	29	0%
Total area of mule deer habitat (acres)	**196,119**	**2,008,640**	**10%**
Rocky Mountain elk			
Area of crucial spring/fall habitat (acres)	1,424	56,171	3%
Area of crucial summer habitat (acres)	7,007	129,104	5%
Area of crucial winter habitat (acres)	72,487	341,489	21%
Area of substantial winter habitat (acres)	7,520	137,261	5%
Area of crucial year-long habitat (acres)	0	106,134	0%
Area of substantial year-long habitat (acres)	0	37,032	0%
Total area of Rocky Mountain elk habitat (acres)	**88,438**	**807,191**	**11%**
Black bear			
Area of crucial year-long habitat (acres)	61,938	567,110	11%

Table WILD-2. Birds of Conservation Concern Region 16 and Utah Partners in Flight High-Priority Species

Common Name (*Scientific Name*)	BCC	PIF	Utah Habitats	First Breeding Habitat	Second Breeding Habitat	Winter Habitat
Black rosy-finch (*Leucosticte atrata*)	X	X	Substantial/critical	Alpine	Alpine	Desert canyons/ grasslands
Black-throated gray warbler (*Setophaga nigrescens*)		X	Prime breeding	Pinyon-juniper	Mountain scrub	Migrant
Bobolink (*Dolichonyx oryzivorus*)		X	Prime breeding/ Winter	Wet meadow	Agriculture	High desert scrub
Brewer's sparrow (*Spizella breweri*)	X	X	Critical/high	Shrub-steppe	High desert scrub	Migrant
Broad-tailed hummingbird (*Selasphorus platycercus*)		X	High/substantial	Lowland riparian	Mountain riparian	Migrant
Burrowing owl (*Athene cunicularia*)	X		Primary breeding	High desert scrub	Grassland	Migrant
Gambel's quail (*Callipepla gambelii*)		X	High	Low desert scrub	Lowland riparian	Low desert scrub
Golden eagle (*Aquila chrysaetos*)	X		High	Cliff	High desert scrub	High desert scrub
Grace's warbler (*Setophaga graciae*)	X		Critical	Ponderosa pine	Mixed conifer	Migrant
Gray vireo (*Vireo vicinior*)	X	X	Prime breeding/ winter	Pinyon-juniper	Oak	Migrant
Lucy's warbler (*Oreothlypis luciae*)		X	Breeding	Lowland riparian	–	Migrant
Cassin's finch (*Haemorhous cassinii*)	X		Breeding	Ponderosa pine	Mixed conifer	Migrant
Juniper titmouse (*Baeolophus ridgwayi*)	X		Breeding/winter	Pinyon-juniper	–	Pinyon-juniper
Pinyon jay (*Gymnorhinus cyanocephalus*)	X		Breeding/winter	Pinyon-juniper	–	Pinyon-juniper

Common Name (*Scientific Name*)	BCC	PIF	Utah Habitats	First Breeding Habitat	Second Breeding Habitat	Winter Habitat
Prairie falcon (*Falco mexicanus*)	X		Breeding/winter	Cliff	High desert shrub	High desert shrub
Sagebrush sparrow (*Artemisiospiza nevadensis*)	X		Breeding	Shrub-steppe	–	Migrant
Virginia's warbler (*Oreothlypis virginiae*)	X		Breeding	Oak/mountain shrub	Pinyon-juniper	Migrant

Wildlife populations are subject to biotic conditions and trends, including the availability of food, shelter, and water. Wildlife and fishery populations would be affected by the same factors identified in Section 3.15. Big game populations are generally stable or climbing in the Planning Area. Many other wildlife populations, including upland game, neotropical migratory birds, and raptors, have been experiencing moderate population declines, especially habitat specialists. These declines are often a result of habitat loss and degradation occurring outside the Planning Area or poor habitat conditions caused by drought. Drought conditions are forecasted to continue in the Planning Area, which directly influence the prevalence of water and therefore vegetation. If drought conditions continue, wildlife populations could experience continued declines in the Planning Area.

Fish habitat in the Planning Area is limited to streams with perennial flow. Special status fish species are addressed in Section 3.15. Table WILD-3 provides a list of fish species known to occur in the Planning Area. Habitat requirements for species of the salmon/trout family vary but generally include cooler water temperatures (below 70 degrees Fahrenheit) and clean gravels (Eddy and Underhill 1978). Species from the sucker and minnow families, catfish, and introduced game fish that are likely to occur in the San Juan River and Arch Canyon/Comb Wash are widespread and live in and are tolerant of a wider range of water quality conditions compared to trout. Important habitat suitability factors for these warmer water species include water temperature, turbidity/sediment load, flow regime, and in-stream habitat.

Table WILD-3. Utah Division of Wildlife Resources Inventory of Fisheries within the Planning Area

Waterway	Species
San Juan River	Flannelmouth sucker, bluehead sucker, channel catfish, roundtail chub, speckled dace, plains killifish, fathead minnow, red shiner, sand shiner, smallmouth bass, largemouth bass, common carp, brown trout, rainbow trout, white sucker, various sucker hybrids, green sunfish, black bullhead, walleye
Arch Canyon/Comb Wash	Flannelmouth sucker, bluehead sucker, speckled dace, mountain sucker, fathead minnow, red shiner, plains killifish
Indian Creek	Cutthroat trout of unknown subspecies

3.20.1.2. USFS MANAGEMENT INDICATOR SPECIES

As required by the USFS 1982 planning rule, the 1986 Manti-La Sal LRMP identifies MIS. Per the USFS 2012 planning rule (36 CFR 219.17(c)), for a plan developed under a prior planning regulation, "no obligations remain from any prior planning regulation, except those that are specifically included in a unit's existing plan." The MIS that are identified in the 1986 Manti-La Sal LRMP are listed in Table WILD-4. Habitat for MIS is present on USFS-administered lands within the Planning Area. The environmental consequences for these MIS are included because they were identified in the 1986 Manti-La Sal LRMP as MIS for their economic importance, for being a Federal or State interest species, or for being a special status species. The five species with habitat in the Planning Area on USFS-administered lands are discussed individually below.

Table WILD-4. Management Indicator Species of the Manti-La Sal National Forest

Species	Habitat Association	Species or Habitat in the Planning Area on USFS-administered lands?	Rationale
Golden eagle	Shrub-steppe	Yes	Multiple habitats are present within USFS-administered lands in the BENM.
Greater sage-grouse	Shrub-steppe	No	There is no mapped sage-grouse habitat or known records of sage-grouse in the BENM.
Northern goshawk	Mature forest	Yes	Forest habitat requirements for this species are present on USFS-administered lands in the BENM.

Species	Habitat Association	Species or Habitat in the Planning Area on USFS-administered lands?	Rationale
Macro-invertebrates	Aquatic	No	There are no perennial streams on USFS-administered lands in the BENM.
Abert's squirrel	Ponderosa pine	Yes	Ponderosa pine habitat is present on USFS-administered lands in the BENM.
Mule deer	Shrub-steppe	Yes	Shrub-steppe habitat supports a population of mule deer on USFS-administered lands in the BENM.
Rocky Mountain elk	Shrub-steppe	Yes	Shrub-steppe habitat supports a population of Rocky Mountain elk on USFS-administered lands in the BENM.

3.20.1.2.1. Golden Eagle

A common resident of Utah, golden eagles likely use multiple vegetative communities on BLM- and USFS-administered lands within the Planning Area. Golden eagles use open country and generally avoid large expanses of contiguous forested habitats. This species generally nests on cliffs in open habitats. Golden eagles have been identified as an MIS in the Manti-La Sal National Forest to monitor impacts of activities and disturbance in nesting territories as a result of ground-disturbing activities such as mining and oil and gas development.

Based on North American Breeding Bird Survey data (USGS 2017), golden eagle populations in Utah have been experiencing a slight decline from 1966 to 2005 (1.2% decline) and from 2005 to 2015 at a slightly greater rate (1.5% decline) (USGS 2017). These data suggest that golden eagle populations within the Planning Area and the Manti-La Sal National Forest have followed statewide trends and experienced slight population declines since 1966.

3.20.1.2.2. Northern Goshawk

Northern goshawk uses various mature and old-growth forested habitats and generally prefers to hunt within forested habitats along riparian corridors and open habitat, including sagebrush steppe. For nesting, goshawks often select the largest trees present within a stand; they prefer to build their nests in conifers but will also build nests in deciduous tree species such as aspens and birch. Northern goshawk was added as an MIS to the Manti-La Sal National Forest in 2000 in conjunction with a LRMP amendment (USDA 2000). Monitoring of this species assists with management of mature forests on USFS-administered lands.

Based on North American Breeding Bird Survey data (USGS 2017), northern goshawk populations in Utah have been experiencing a decline from 1966 to 2005 (1.7% decline) and from 2005 to 2015 at a greater rate of decline (2.2% decline) (USGS 2017). These data suggest that northern goshawk populations within the Planning Area and the Manti-La Sal National Forest have followed statewide trends and experienced slight population declines since 1966.

3.20.1.2.3. Abert's Squirrel

Abert's squirrel (*Sciurus aberti*) is dependent on ponderosa pine habitat for nesting habitat and food. They use ponderosa pines for their diet (cambium, buds, and seeds) and for building stick nests to raise their young. Ponderosa pine accounts for approximately 11% of the Manti-La Sal National Forest (O'Brien and Woudenberg 1998). Furthermore, characteristics of ponderosa pine trees determine the habitat quality for Abert's squirrel—specifically, their populations tend to fluctuate in response to aspects of ponderosa pine habitat trends. Abert's squirrel has been identified as an MIS in the Manti-La Sal National Forest to monitor the health of ponderosa pine forests.

Population trends for Abert's squirrel are closely tied to forest management practices that have the capacity to alter forest condition and can be best inferred based on the availability of suitable habitat (ponderosa pine) for this species. Overall, squirrel density has fluctuated at approximately 0.6 squirrel/10 acres, indicating a relatively stable but low-density population. Current conditions in the ponderosa pine vegetation type are related to a stand-replacing event ca. 1900, historic and current timber management practices, fire suppression, drought, and pine beetle activity (AMS Section 2.21.4.7)

3.20.1.2.4. Mule Deer

Mule deer is a widespread species throughout Utah. Mule deer habitat within the analysis area is presented in Table WILD-1. Mule deer is dependent on mid-successional stages of shrub and forest habitat types; activities within these habitats can affect mule deer at a population level. Mule deer has been identified as an MIS in the Manti-La Sal National Forest to monitor the effects of shrub-steppe management.

Mule deer forest-wide populations are variable due largely to prolonged drought conditions and harsh winter conditions. Mule deer trends have been increasing statewide, and the trend is climbing. However, populations specifically within the Planning Area have been declining in past years because of poor range conditions as a result of severe drought.

3.20.1.2.5. Rocky Mountain Elk

Rocky Mountain elk uses forest habitat within the Planning Area and throughout the larger analysis area (see Table WILD-1). Monitoring of elk assists in identifying the effects of different land uses within their range. Elk has been identified as an MIS in the Manti-La Sal National Forest to monitor the health of forested shrub-steppe habitats.

Forest-wide population trends for this species are variable from year to year based on a number of factors, including drought conditions and the severity of winters; however, overall, their population is considered stable and near UDWR population objectives.

3.20.2. Environmental Consequences

3.20.2.1. ANALYSIS METHODS

For the evaluation of potential impacts, wildlife and fish species with similar life histories and habitat requirements are grouped together for discussion to eliminate redundancy. Impacts to wildlife and fish species may occur because of effects on their potential habitats, which may serve as important foraging and/or breeding habitat necessary for their success at the population level. The BLM and USFS would implement BMPs and stipulations for actions authorized by the agencies that may impact wildlife and fish under all alternatives (See Appendices H, I, and J). These BMPs and stipulations would help avoid or minimize impacts to these species.

3.20.2.1.1. Assumptions

- Wildlife habitat extent and location can be represented by UDWR-delineated habitats (for big game species) and vegetation throughout the Planning Area.
- The health of fisheries in the Planning Area is directly correlated with the health and functions of riparian and wetland resources.
- The amount of surface disturbance allowed in various wildlife habitats by each alternative is a good index of potential impacts to wildlife and fish.

3.20.2.2. DIRECT AND INDIRECT IMPACTS

3.20.2.2.1. Impacts to Big Game

Although big game species generally inhabit large ranges, they are also sensitive to anthropogenic disturbances. Human presence and noise from surface-disturbing activities (e.g., woodland harvest, road construction, ROW activities) and recreation (e.g., OHV use, camping, hiking) can result in displacement from suitable habitats, habitat fragmentation, and habitat loss. Additionally, big game species can compete with domestic livestock for forage, water, and thermal or hiding cover. In general, all action alternatives would result in less potential for surface disturbance affecting big game species than Alternative A and include more management actions addressing potential impacts to wildlife and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.15.2).

Big game species are susceptible to disturbance as a result of increased human presence, often resulting in temporary displacement of wildlife. Taylor and Knight (2003) revealed that both hikers and mountain bikers displaced wildlife; this result was most notable in smaller species such as mule deer and pronghorn

(*Antilocapra americana*), where their flight response was observed 96% of the time (Taylor and Knight 2003). The number of designated routes available for OHV or mechanized use can be used as an indicator of the relative magnitude of these types of impacts under each alternative and is provided in Table WILD-5. In general, under Alternatives A, C, D, and E, the number of designated routes throughout the Planning Area would remain unchanged; Alternative B would result in BLM and USFS closure of designated routes located in areas closed to OHV use. Alternative B would have the lowest potential impact to wildlife species from OHV use (see Table WILD-5). Displacement of wildlife causes increased energy expenditure, as human presence can often induce an antipredator response; in general, this type of displacement is relatively benign to the animal, not causing long-term impacts. Continued use of an area over time can lead to wildlife acclimating to human presence, decreasing the likelihood of inducing an antipredator response. It would therefore be expected that greater impacts to wildlife would occur in areas newly opened to recreation relative to areas that are regularly used (Cole 2004; Marzano and Dandy 2012). In general, the severity of potential impacts to big game would depend on the frequency, type, and spatial distribution of use throughout the Planning Area.

Table WILD-5. Designated Routes in OHV Limited Areas

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Designated routes located in areas designated as OHV limited areas (linear miles)	373 (99%)	314 (82%)	373 (99%)	373 (99%)	373 (99%)

Under all alternatives, recreational use is expected to remain relatively dispersed throughout the Planning Area over the life of the plans. However, Alternatives A, D, and E would generally allow more intense recreational uses (i.e., larger groups, more permitted events, and fewer restrictions) compared to Alternatives B and C, with Alternative A being the least restrictive of recreational uses. Therefore, these alternatives would be anticipated to have higher impacts on big game species from recreation. Under Alternative B, large areas of the Planning Area would be managed for wilderness characteristics. This management would prohibit impacts from OHV recreation and other surface-disturbing uses on big game species.

OHV use can lead to destruction of vegetation, erosion, increased noise, and habitat fragmentation. OHV use can directly impact habitats by destroying vegetation and acting as a vector for invasive/noxious plant introduction and proliferation. More directly, OHV use can result in direct injury and/or mortality of big game species through collision, which is generally a rare occurrence and would not be expected to cause any significant impacts at a population level. Alternatives with more routes or more areas open to OHV use would be expected to have higher impacts on big game species and their habitats, as OHV use could increase wildlife displacement around OHV trails. OHV use can also result in avoidance of areas where OHV tracks and human-related noise occur; studies have identified avoidance of trails by elk during any recreational use (OHV riding, biking, horseback riding, and hiking) (Wisdom et al. 2018).

Increases in noise levels (relative to ambient noise levels) are generally considered a detriment to wildlife. For instance, noise increases can lead to panic responses in wild populations of ungulates (Weisenberger et al. 1996), which ultimately requires energy from the animals, which can put them at health risk, especially during years of drought, where resources may be more limited and energy conservation would be considered much more valuable. Although not well studied, it has been inferred that increases in noise levels can cause changes in home ranges, foraging patterns, and breeding behavior (Blickley and Patricelli 2010). In general, noise impacts would be most expected from OHV use and would be most detrimental to big game during reproductive and young-rearing times within known important habitat ranges. Based on a noise attenuation calculation, assuming 101 decibels (the average noise associated with OHVs with approved spark arrestor mufflers), noise from OHVs would be near natural background noise levels of 40 to 45 decibels (wind, running water, birds, etc.) in approximately 0.5 mile. Based on this calculation, big game beyond 0.5 mile from any OHV trails would not be expected to experience negative impacts related to noise. Additionally, target shooting within the Planning Area could result in adverse noise disturbances to wildlife species similar to those described above regarding OHV vehicle use.

Table WILD-6 presents big game habitats that would be open and closed to OHV use under each alternative. Because of the amount of habitat available and the relatively small area impacted by OHV use, these impacts would not result in impacts to species viability or manageability.

Impacts on big game as a result of livestock grazing could include a decrease in biodiversity, competition for forage, decreased vegetative densities, and changes to the characteristics of the terrestrial habitat (Olff and Ritchie 1998). Ultimately, these impacts can lead to degraded habitat and forage for big game species. Under all alternatives, livestock grazing would be managed to meet or make progress toward Utah Rangeland Health Standards (BLM 1997) or USFS desired conditions for rangelands, which would be expected to eliminate Planning Area–wide or population-level conflicts between livestock and big game. Table WILD-6 presents the areas of big game habitats that would be available (BLM)/suitable (USFS) and unavailable (BLM)/not suitable (USFS) for livestock grazing under each alternative.

Management of vegetation within the Planning Area would involve treatment of invasive/noxious plants, pinyon juniper/fuel reduction, and prescribed burns to limit the proliferation of existing invasive/noxious plants and promote growth of native flora. Although long-term management of vegetation should provide benefits to habitats within treatment areas in the BENM, there would be short-term adverse impacts to wildlife and fisheries related to temporary loss of habitat, forage, refuge, and mortality. Upland vegetation treatments can reduce the potential for damage from high-severity wildland fire, while creating seral stage diversity across the landscape, and promoting understory restoration through the germination and establishment of grasses, forbs, and shrubs. Restoring a healthy understory enhances the resiliency, structure, and diversity of the vegetative community and provides better browse, forage, and habitat options for wildlife. Vegetation treatments in riparian communities that remove woody (such as Russian olive and tamarisk) and herbaceous (such as Russian knapweed and camelthorn) invasive species reduces the risk of high-severity fire, restores natural ecological and hydrological processes, helps to achieve or maintain proper functioning condition, improves system resiliency, and provides opportunities for passive or active revegetation of native species. Reversing the trend of woody invasive species encroachment is important for many species but is critical for improving habitat for special status birds and maintaining seasonally inundated side channel habitat for special status fish.

Treatments of invasive/noxious plants would have an overall beneficial impact to big game wildlife species within the Planning Area. Management of invasive/noxious plant species would decrease cover of these species while allowing recruitment of native plants that serve as a greater source of forage for big game species. Over one to two growing seasons, impacts would result in loss of forage. However, areas being treated would presumably have a higher percentage of invasive/noxious plant cover; therefore, such areas already provide lower quality forage. Long-term impacts would result in higher quality habitats and forage for big game wildlife species, as well as native pollinators and monarch butterfly (*Danaus plexippus*).

Impacts related to ROW development are expected to be minimal over the life of the plans because there is anticipated to be a low demand for ROWs in the Planning Area. Wildlife habitats that would be open to ROWs are presented in Table WILD-6. The greatest potential impacts would occur under Alternatives A, D, and E, where the greatest amount of area is open for ROW development, with Alternative A having the largest area available for ROW development. Under Alternative B, ROW development would not be permitted; for this reason, no impacts would occur. Under Alternative C, much of the area open to ROW development would be avoided to the extent practicable.

Table WILD-6. Acreage of Open Management Activities within Big Game Habitat by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Mule deer					
OHV – limited (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	15,645 (76%)	11,306 (55%)	15,645 (76%)	15,645 (76%)	15,645 (76%)
Summer crucial habitat	9,685 (66%)	9,685 (66%)	9,685 (66%)	9,685 (66%)	9,685 (66%)
Winter crucial habitat	95,155 (78%)	52,301 (43%)	95,155 (78%)	95,155 (78%)	95,155 (78%)
Winter substantial habitat	27,448 (72%)	5,428 (16%)	27,448 (72%)	27,448 (72%)	27,448 (72%)

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Livestock grazing – area available/suitable for grazing (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	19,543 (94%)	13,965 (67%)	19,442 (94%)	19,443 (94%)	19,388 (94%)
Summer crucial habitat	14,729 (100%)	14,469 (98%)	14,477 (98%)	14,477 (98%)	14,470 (98%)
Winter crucial habitat	96,812 (79%)	83,507 (68%)	96,767 (79%)	96,806 (79%)	96,797 (79%)
Winter substantial habitat	31,155 (82%)	23,682 (62%)	27,484 (72%)	27,484 (72%)	27,453 (72%)
Woodland harvesting – area open to harvesting (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	14,889 (72%)	9,138 (44%)	13,436 (65%)	13,436 (65%)	14,889 (72%)
Summer crucial habitat	9,529 (65%)	9,149 (62%)	9,149 (62%)	9,149 (62%)	9,529 (65%)
Winter crucial habitat	57,838 (47%)	32,995 (27%)	48,624 (40%)	48,624 (40%)	57,838 (47%)
Winter substantial habitat	472 (1%)	489 (1%)	469 (1%)	469 (1%)	472 (1%)
ROW – area open to ROW (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	16,805 (81%)	0 (0%)	0 (0%)	3,266 (16%)	3,266 (16%)
Summer crucial habitat	14,722 (100%)	0 (0%)	0 (0%)	532 (4%)	532 (4%)
Winter crucial habitat	83,429 (68%)	0 (0%)	0 (0%)	45,149 (37%)	45,149 (37%)
Winter substantial habitat	18,249 (48%)	0 (0%)	0 (0%)	7,905 (21%)	7,905 (21%)
ROW – avoidance area to ROW (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	0 (0%)	0 (0%)	3,652 (18%)	13,539 (65%)	13,539 (65%)
Summer crucial habitat	0 (0%)	0 (0%)	535 (4%)	14,185 (96%)	14,185 (96%)
Winter crucial habitat	12,641 (10%)	0 (0%)	38,758 (31%)	51,984 (42%)	51,984 (42%)
Winter substantial habitat	15,943 (42%)	0 (0%)	366 (1%)	26,288 (69%)	26,288 (69%)
Rocky Mountain elk					
OHV – limited (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	1,338 (94%)	1,342 (94%)	1,338 (94%)	1,338 (94%)	1,338 (94%)
Summer crucial habitat	6,094 (87%)	6,094 (87%)	6,094 (87%)	6,094 (87%)	6,094 (87%)
Winter crucial habitat	51,537 (71%)	34,522 (48%)	51,537 (71%)	51,537 (71%)	51,537 (71%)
Winter substantial habitat	2,515 (33%)	230 (3%)	2,515 (33%)	2,515 (33%)	2,515 (33%)
Livestock grazing – area available/suitable for grazing (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	1,348 (95%)	1,342 (94%)	1,348 (95%)	1,348 (95%)	1,342 (94%)
Summer crucial habitat	7,007 (100%)	7,007 (100%)	7,007 (100%)	7,007 (100%)	7,007 (100%)
Winter crucial habitat	61,529 (85%)	53,628 (74%)	61,052 (84%)	61,052 (84%)	60,987 (84%)
Winter substantial habitat	5,236 (70%)	1,483 (20%)	1,637 (22%)	1,637 (22%)	1,637 (22%)
Woodland harvesting – area open to harvesting (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	1,337 (94%)	959 (67%)	959 (67%)	959 (67%)	1,337 (94%)
Summer crucial habitat	6,094 (87%)	6,094 (87%)	6,094 (87%)	6,094 (87%)	6,094 (87%)
Winter crucial habitat	39,083 (54%)	26,622 (37%)	34,294 (47%)	34,294 (37%)	39,083 (54%)
Winter substantial habitat	231 (3%)	227 (3%)	227 (3%)	227 (3%)	231 (3%)
ROW – area open to ROW (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	1,342 (94%)	0 (0%)	(0%)	1,286 (90%)	1,286 (90%)
Summer crucial habitat	7,007 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Winter crucial habitat	58,673 (81%)	0 (0%)	0 (0%)	22,186 (31%)	22,186 (31%)
Winter substantial habitat	7,270 (97%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
ROW – avoidance areas to ROW (acres [percentage of total available habitat in the Planning Area])					
Spring/fall crucial habitat	0 (0%)	0 (0%)	1,342 (94%)	56 (4%)	56 (4%)
Summer crucial habitat	0 (0%)	0 (0%)	0 (0%)	7,007 (100%)	7,007 (100%)
Winter crucial habitat	73 (<1%)	0 (0%)	15,778 (22%)	37,629 (52%)	37,629 (52%)
Winter substantial habitat	0 (0%)	0 (0%)	0 (0%)	7,267 (97%)	7,267 (97%)

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Black bear					
OHV – limited (acres [percentage of total available habitat in the Planning Area])					
Yearlong crucial habitat	44,036 (71%)	25,402 (41%)	44,036 (71%)	44,036 (71%)	44,036 (71%)
Livestock grazing – area available/suitable for grazing (acres [percentage of total available habitat in the Planning Area])					
Yearlong crucial habitat	56,129 (91%)	43,891 (71%)	52,229 (84%)	52,268 (84%)	52,261 (84%)
Woodland harvesting – area open to harvesting (acres [percentage of total available habitat in the Planning Area])					
Yearlong crucial habitat	34,559 (56%)	20,288 (33%)	32,495 (52%)	32,495 (52%)	34,559 (56%)
ROW – area open to ROW (acres [percentage of total available habitat in the Planning Area])					
Yearlong crucial habitat	56,407 (91%)	0 (0%)	0 (0%)	22,245 (36%)	22,245 (36%)
ROW – avoidance area to ROW (acres [percentage of total available habitat in the Planning Area])					
Yearlong crucial habitat	129 (<1%)	0 (0%)	22,935 (37%)	34,336 (55%)	34,336 (55%)

3.20.2.2.2. Impacts to Migratory Birds

Birds are susceptible to anthropogenic impacts during the breeding period, when adults sit on nests and eggs/young lack mobility for a period of time, thus decreasing their likelihood of escape from predators and/or unintentional human impacts. Under all alternatives, surface-disturbing activities would be minimized to the extent practicable during the nesting season. Although hiking and camping would not generally be expected to cause adverse impacts to bird populations, habitat degradation could occur near high-use trails that could affect forage and nesting habitat. Increased noise levels would likely result in temporary displacement of birds. In general, most of the Planning Area would not be expected to experience high noise levels under any alternative. OHV use and vehicle traffic are anticipated to be the primary sources of noise, which would be limited to roads and trails. The likelihood of nest abandonment is greater for nests near existing OHV trails, relative to nests at greater distances. Additionally, a 2007 study discovered that, in general, nests occurred at lower frequencies near OHV trails, suggesting that birds avoid nesting in areas where disturbance regularly occurs (Barton and Holmes 2007). Target shooting can also produce noise, which could adversely impact migratory birds near of the activity within the Planning Area. All action alternatives would include more management actions addressing potential impacts to migratory birds and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.15.2).

Grazing could result in decreased vegetative cover and diversity, which can indirectly lead to increases in predation on birds from the lack of cover (Gregg et al. 1994), especially to juveniles and eggs. However, under all alternatives, adherence to or moving toward adherence to *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or USFS desired conditions for rangelands would occur, thus minimizing potential impacts from livestock grazing.

Many raptor species use rocky outcrops and cliffs for nesting habitat; furthermore, they are a top predator and serve an important role in the ecology of the Planning Area. Climbing activity near actively nesting raptors would disturb the birds and could result in abandonment of nests. Under all alternatives, special protections would be in place to assist in minimizing impacts to these species and to protect habitat important to their life history. Specifically, the BLM and USFS would use seasonal and spatial buffers to maintain and enhance raptor nesting and foraging habitat (see Appendix H). Under all alternatives, to protect actively nesting raptors from climbers, seasonal management restrictions may be put in place at specific areas in the Planning Area, and educational information and signage would be provided to alert climbers and facilitate the reduction of climbing/canyoneering impacts on active raptor nests, Under Alternative C, monitoring of nests would occur. Climbing areas would be reopened after monitoring indicates that the nesting period is over or historical nest locations are deemed to be no longer active. Such protections should provide raptors with the necessary time needed for their young to fledge nests, thus increasing their survivorship and assisting in a rise in population over time. Alternative B would provide the most restrictive protections to raptors from climbers. However, under all alternatives, the existing distribution of nest sites and population levels for raptors would be anticipated to continue through the life of the plans.

Section 3.18 addresses the potential impacts of the alternatives on vegetation, including riparian areas that provide habitats for migratory birds. In general, Alternatives A, D, and E would allow more resource uses (including ROWs, OHV use, livestock grazing, vegetation treatments, and larger group sizes) and less restricted recreational activities compared to Alternatives B and C, with Alternative A being the least restrictive, in general. Alternatives A, D, and E would be anticipated to have the largest impacts on migratory birds; however, Alternatives D and E, as well as the other action alternatives, would apply nesting season time frame requirements that would be more reflective of restrictions needed to avoid impacts on migratory birds in the planning area than those under Alternative A. Alternative B would have the least impacts on migratory birds. However, under all alternatives, most migratory bird habitats in the Planning Area are anticipated to remain undisturbed through the life of the plans. Therefore, the existing distribution and population levels for migratory bird species would be anticipated to continue through the life of the plan.

3.20.2.2.3. Impacts to Fisheries

Impacts to fisheries in the Planning Area are closely tied to management activities affecting riparian areas, stream habitat, and water quality and quantity. Potential impacts to salmon/trout species could result from activities that degrade riparian areas along Indian Creek, particularly those that increase turbidity, sedimentation, and stream temperature; degrade stream habitat through channel widening and channelization; and reduce flows through hydrologic changes, including water withdrawal from alluvial aquifers. Although fish species likely present in Arch Canyon/Comb Wash are generally less sensitive to impacts from water temperature changes, sedimentation, and turbidity, these species would also be impacted by degradation of riparian areas and water quality and water quantity impacts. For all alternatives, management actions affecting the San Juan River would prioritize recovery plans related to Colorado pikeminnow and razorback sucker, discussed in Section 3.15. Impacts on water resources and riparian and wetland areas are described in Section 3.12. Alternatives A, D, and E would have greater impacts than Alternative C, and Alternative B would have the least impacts. However, under all alternatives, protection of water resources and riparian areas would be a priority for management. Therefore, under all alternatives, the existing distribution and population trends of fish species present in the Planning Area are anticipated to continue for the life of the plan. In general, all action alternatives would result in less potential for surface disturbance affecting fisheries than Alternative A and include more management actions addressing potential impacts to fisheries and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.15.2).

3.20.2.2.4. Impacts to U.S. Forest Service Management Indicator Species

USFS-administered lands within the Planning Area encompass approximately 32,587 acres of land, which represents approximately 2.3% of the entire Manti-La Sal National Forest in Utah. Because the Planning Area is limited to an area representing approximately 2.3% of the Manti-La Sal National Forest, potential impacts to MIS in the Planning Area would need to be substantial to alter forest-wide population or habitat trends. Under all alternatives, large surface-disturbing activities such as mines would not occur. Potential impacts on USFS-administered lands are anticipated to largely be limited to recreational activities and livestock grazing. Surface-disturbing activities would be anticipated to be greatest under Alternatives D and E, whereas Alternative B would result in the least amount of surface-disturbing activities. Under Alternative C, surface-disturbing activities would be monitored and generally allowed to continue unless degradation of habitat or other adverse impacts are identified—in which case, management decisions would be made to minimize such impacts. In general, all action alternatives would result in less potential for surface disturbance affecting MIS than Alternative A and include more management actions addressing potential impacts to wildlife and the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.15.2).

Abert's Squirrel

Because of their specific habitat requirements, it would be expected that Abert's squirrel would only be present within ponderosa pine forests. For this reason, impacts to this species on USFS-administered lands within the Planning Area would be limited. Such impacts could be related to recreational activities, OHV use, vegetation treatments, woodland harvesting, and livestock grazing. Under all alternatives, priority would be given to meeting or making progress toward meeting the *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or USFS desired conditions for

rangelands, thus minimizing potential impacts from livestock grazing. Ponderosa pine habitats on USFS-administered lands would be available for timber stand improvement projects (thinning) and commercial timber harvest under all alternatives. Under all alternatives, habitat needs for Abert's squirrel in ponderosa pine habitat would be a priority, with a goal to maintain a minimum of one squirrel per 10 acres and to maintain and/or improve habitat conditions on at least 60% of the ponderosa pine habitat present on USFS-administered lands within the Planning Area. These goals place a priority on ponderosa pine habitat, which would offset any potential impacts to this habitat type and could result in improvements to habitat conditions.

This MIS analysis indicates that implementation of any of the alternatives would not affect the stable forest-wide populations and would not result in a loss of viability in the Planning Area or cause a trend toward Federal listing for Abert's squirrel.

Rocky Mountain Elk

Impacts to elk are discussed in Section 3.20.2.2 under Big Game. It would be expected that the same potential impacts to Rocky Mountain elk populations would occur on USFS-administered lands present within the Planning Area.

This MIS analysis indicates that implementation of any of the alternatives would not affect the stable forest-wide populations and would not result in a loss of viability in the Planning Area or cause a trend toward Federal listing for Rocky Mountain elk.

Mule Deer

Impacts to mule deer are discussed in Section 3.20.2.2 under Big Game. It would be expected that the same potential impacts to mule deer populations would occur on the USFS-administered lands present within the Planning Area.

This MIS analysis indicates that implementation of any of the alternatives would not affect the forest-wide populations trends and would not result in a loss of viability in the Planning Area or cause a trend toward Federal listing for mule deer.

Golden Eagle

Impacts to golden eagle and other raptors are discussed above in Section 3.20.2.2 under Migratory Birds. In general, impacts to raptors, including golden eagle, would be minimized by adhering to raptor BMPs (see Appendix H), utilizing seasonal and spatial buffers and mitigation to maintain and enhance raptor nesting and foraging habitat. Because golden eagles often nest on cliffs or rocky outcrops, they could experience disturbance from recreational climbers, potentially causing temporary displacement and/or nest abandonment. However, there are few cliffs on USFS-administered lands used for climbing, and impacts related to recreational climbing activities would be minimized under all alternatives, as described in Section 3.20.2.2. For this reason, impacts on golden eagles would not be anticipated.

This MIS analysis indicates that implementation of any of the alternatives would not affect the forest-wide populations trends and would not result in a loss of viability in the Planning Area or cause a trend toward Federal listing for golden eagle.

Northern Goshawk

Impacts to the forested habitat where this species would be expected to occur would be minimal on USFS-administered lands within the Planning Area. Potential impacts would be limited to recreational activities, OHV use, vegetation treatments, woodland harvesting, and livestock grazing. Forest habitats on USFS-administered lands would be available for commercial timber harvest under all alternatives. Impacts to northern goshawk and other raptors are discussed in Section 3.20.2.2 under Migratory Birds. In general, impacts to raptors, including northern goshawk, would be minimized by adhering to raptor BMPs in Appendix H, using seasonal and spatial buffers and mitigation to maintain and enhance raptor nesting and foraging habitat.

This MIS analysis indicates that implementation of any of the alternatives would not affect the forest-wide populations trends and would not result in a loss of viability in the Planning Area or cause a trend toward Federal listing for northern goshawk.

3.21. Forestry and Woodlands

Woodland resources are generally defined as those tree species that are used as non-sawtimber products and sold in units other than board feet. Timber products are generally defined as logs, bolts, or other round sections cut from trees for industrial or consumer uses. Timber production is the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use.

Woodlands and forested areas in the Planning Area provide benefits such as forage, cover, and nesting for a variety of wildlife species. Woodlands and forested areas contribute to Monument values such as aesthetic settings for visitors to the Planning Area; opportunities for comparative studies of pinyon-juniper woodland and sagebrush communities in other parts of the Colorado Plateau; the collection of seeds, pine nuts, forest products, and firewood; the opportunity for private and commercial use of woodland products; and cottonwood and willow harvest for American Indian ceremonial uses. Riparian woodlands are discussed in Section 3.12. Section 2.22 of the AMS provides detailed information regarding woodland and forest communities and their management.

The analysis area for woodland and forest resources is the Planning Area. This area was selected because it includes all woodland and forest resources that would experience impacts from management decisions. The amount of land with woodland products that would be open or closed to woodland product harvest is a direct indicator of forest and woodland condition within the Planning Area. Woodland product harvest is the harvest of products from noncommercial woodland species such as juniper, mountain mahogany, or quaking aspen groves.

3.21.1. Affected Environment

Woodlands and forested lands across the Planning Area were identified using land cover data developed by the Southwest Regional Gap Analysis Project (SWReGAP) (USGS National Gap Analysis Program 2004) and Vegetation Classification, Mapping, and Quantitative Inventory (VCMQ) imagery and spatial data (Nelson et al. 2015).

3.21.1.1. FOREST AND WOODLAND VEGETATION COMMUNITIES

Woodland resources within the Planning Area consist primarily of pinyon pine and Utah juniper. Other woodland and forest types present in the Planning Area consist of mixed conifer-mountain shrub communities, aspen and aspen-mixed conifer communities, and mixed conifer (dry) communities.

Trends for the mixed conifer-mountain shrub community are for the most part stable. There have been some localized impacts from encroachment of pinyon and juniper and loss due to wildfire.

Pinyon-juniper plant community distribution and dynamics across the landscape are primarily driven by climate. Since the mid-1900s, pinyon-juniper ecotypes have expanded into other ecotypes. The geographic extent of pinyon-juniper communities is expanding due to encroachment into sites that were historically sagebrush or mountain shrub communities. Pinyon pine and juniper mortality, attributed to the combination of drought, insects, and disease, has led to an increase in fuel loading and area fire hazards, although it may also temporarily support firewood collection needs.

In aspen and aspen-mixed conifer communities, the lack of disturbance allows the natural progression of aspen to succeed to conifers. Increases in the abundance and density of conifers make this forest type more susceptible to large-scale insect infestations, disease outbreaks, and severe wildland fires, possibly endangering overall forest ecosystem health (Hood and Miller 2007). Areas where aspen decline and dieback are present due to insect and disease agents have converted to ponderosa pine or Douglas-fir forest types.

Stand densities have increased in mixed conifer (dry) communities due to limited management activities and fire suppression activities. Because of fire exclusion for the last 100 years, ladder fuels and extremely dense stands of ponderosa pine could contribute to wildfires outside the historical range in intensity and size. Ponderosa pine is affected by dwarf mistletoe (*Arceuthobium* spp.), and the reduction in numbers of Douglas-fir is partly due to western spruce budworm (*Choristoneura occidentalis*) and Douglas-fir beetle (*Dendroctonus pseudotsugae*).

3.21.1.2. TIMBER AND WOODLAND HARVEST

On BLM lands within the Planning Area, there are six existing designated timber harvest areas: Cedar Mesa, North Comb Ridge, South Cottonwood, and White Canyon in the Shash Jáa Unit, and Harts Draw and Salt Creek Mesa in the Indian Creek Unit (see Maps 2-40 through 2-45). The current use of timber and woodland resources allows private and commercial harvest, including aspen and ponderosa pine on USFS-administered lands by permit only. On BLM and USFS-administered land, permits are issued for private and commercial harvest of woodland products for firewood, fence posts, and Christmas trees; the harvest of cottonwoods and willows for use in American Indian ceremonies; and fuel treatment projects. The quantities and concentrations of timber and woodland resources are too low to have a significant commercial value. Timber and woodland resources are managed by controlling harvests and sales. Table 2-96 in the AMS provides the number of wood permits sold in the MFO from February 2017 to January 2018, which totals 3,490 permits, at a value of $11,754. Table 2-97 in the AMS provides an estimated value of the wood permits sold on USFS-administered lands within the Planning Area, totaling $1,035.

The demand for forest and woodland products, including firewood, appears to be relatively stable. However, woodland resource monitoring in the Planning Area is limited, and it is assumed that some people harvest wood without obtaining a permit.

3.21.2. Environmental Consequences

3.21.2.1. ANALYSIS METHODS

Impacts to woodlands and forests are described in terms of acres of land with woodland products that would be open or closed to woodland product harvest. Impacts to woodlands and forests could also occur when access off designated routes is allowed for woodland harvest; these impacts are qualitatively discussed in terms of areas open or closed to authorized cross-country OHV use. To assess changes to timber production, acres of land open or closed to timber production are quantified.

The analysis area for this resource is the Planning Area because it includes all land that would experience impacts from management decisions. The temporal analysis area is the life of the plans. This analysis assumes that the level of demand for woodland products would remain relatively stable over the life of the plans. It also assumes that woodland products available for harvest could be impacted by factors (e.g., wildland fire, shifts in vegetation caused by precipitation changes) outside of BLM and USFS management decisions.

3.21.2.2. DIRECT AND INDIRECT IMPACTS

The goals, objectives, and management actions common to all action alternatives for woodlands and forests would help maintain forests in the long term by balancing forest health with forest uses. The management actions would allow for woodland product harvest throughout the life of the plans, including opportunities for Tribal ceremonial use and gathering (e.g., pine nut gathering, cottonwood and willow harvest), while assessing forest conditions to guide management decisions for woodlands and forests. Tribal subsistence activities such as gathering and cutting wood are an archaeological, historic, and cultural resource value identified in the designation of the BENM. All action alternatives would reduce impacts from forestry and woodland activities and include more forestry and woodlands management actions addressing the proper care and management of relevant Monument objects and values than Alternative A (see Section 2.4.16.2).

Alternative A allows for private and commercial use of woodland products in particular zones on BLM-administered lands. Alternative E would allow for only private use in the same zones as Alternative A on BLM-administered lands. Alternatives B, C, and D allow for only private use of woodland products but allow for use in fewer areas on BLM-administered lands. Alternatives B, C, D, and E would designate USFS-administered lands in the Monument as unsuitable for timber production; these lands would be withdrawn from that use (this would not preclude the use of pre-commercial and commercial harvest to meet forest goals and objectives). Approximately 3,646 acres suitable for timber harvest or timber production on USFS-administered lands in the Shash Jáa Unit would no longer be available for commercial timber production under Alternatives B, C, D, and E. When compared to Alternative A, these alternatives could result in a long-term, adverse economic impact from the loss of timber sales. However, based on the acreage that would

no longer be suitable for commercial timber production (3,646 acres), the economic impact would be small.

The primary difference between management actions under the alternatives is where woodland harvest is allowed. Restrictions from other resources would limit harvest in certain areas such as wilderness and riparian corridors. Table WOO-1 and Maps 2-40 through 2-45 show areas with woodland products that would be open or closed to harvest under the alternatives in the analysis area.

Table WOO-1. Areas Open or Closed to Woodland Product Harvest

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Areas with woodland products open to woodland product harvest (acres and percentage of Indian Creek Unit)	22,802 (31.7%)	11,575 (16.1%)	18,482 (25.7%)	18,482 (25.7%)	22,802 (31.7%)
Areas with woodland products open to woodland product harvest (acres and percentage of Shash Jáa Unit)	59,927 (46.2%)	40,176 (30.9%)	53,196 (41.0%)	53,196 (41.0%)	59,927 (46.2%)

Under Alternative B for Indian Creek, the smallest area would be open to woodland product harvest. Alternative B would also provide the smallest area open to woodland product gathering in both units. Alternative C and Alternative D would have the same amount of land open to woodland product harvest in both units. However, Alternative C offers adaptive management through regular monitoring, which would allow additional areas to be closed for reclamation or to protect the resource in both units. Products could be harvested for both private and commercial use under Alternative A. Products could be harvested for private use only under Alternatives B, C, D, and E on BLM-administered lands. All alternatives would allow commercial harvest and woodland activities on USFS-administered lands if those activities provide for the proper care and management of Monument objects and values and were in accordance with the 2001 Roadless Rule.

In general, the more areas that are open to woodland product harvest, the higher the risk of unauthorized roads and trails, damage to cultural or paleontological resources, damage to vegetation, surface disturbance with the potential for increased soil erosion and sedimentation, wildlife habitat fragmentation, and possible impacts to visual aesthetics. These types of impacts—especially if they are widespread or combined—have the potential to adversely change forest health, the integrity of cultural or paleontological sites, water quality, wildlife habitat, and the recreation experience in the short or long term. Under all alternatives, permits would not be issued when inconsistent with the availability of woodland products and the protection of other resource values. Monitoring use permits and areas where woodland harvest is prohibited would allow for appropriate management decision-making, which would also help limit long-term impacts (see Appendix J).

Likewise, fewer opportunities for woodland product harvest would occur when more areas are closed to harvest (e.g., Alternative B). This could result in the public and Tribes being unable to collect products that they need or want due to harvest restrictions. From February 2017 to January 2018, 3,490 wood permits were issued in the MFO, primarily for fuel wood, corner posts, and line posts (see Section 2.22.5.1 of the AMS). Assuming that the Planning Area is approximately 12.7% of the MFO planning area and that harvest occurs evenly across the MFO planning area, approximately 460 wood harvest permits would be sought in the Indian Creek and Shash Jáa Units.

Alternative D allows access off designated routes for permitted woodland product harvest (within 150 feet of designated routes in woodland harvest areas). Alternative A allows permitted access to collect wood within 150 feet of designated routes in the Harts Draw woodland harvest area. Alternatives C and E would be the same as Alternative A, with the exception that additional access for wood gathering could be specifically granted by the Authorized Officer (BLM)/Responsible Official (USFS). Access for wood gathering could also be limited to designated routes if determined necessary through monitoring. Alternative B allows access only in designated woodland harvest areas along designated routes. Accessing woodland products off designated routes could have short-term or long-term adverse impacts similar to those associated with woodland harvest activities themselves. The more areas that are open to woodland harvest access off designated routes, the higher the risk of adverse impacts, including impacts from the illegal use of OHVs; however, prohibiting permitted access off designated routes altogether can make it difficult to

access and remove woodland forest products (e.g., Alternative B). It should also be noted that under Alternative E, any permitted access beyond 150 feet from designated routes would require reclamation and any permitted access would be required to be consistent with the proper care and management of Monument objects and values.

Generally, management actions that result in sustainable or improved woodland and forest health while still meeting woodland product harvest needs would be the most beneficial for woodlands and forests.

3.22. Cumulative Impacts

The CEQ regulations at 40 CFR 1508.7 define *cumulative impacts* as "The impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." The analysis presented in this section analyzes the potential cumulative impacts on the resources potentially impacted by the BLM and USFS's development of the MMPs.

3.22.1. Impact Assessment Methodology

Planning-level decisions are programmatic decisions that allocate resources or allowable uses in all or portions of the Planning Area. As a result, the cumulative impacts analysis is also broad in nature. More detailed analyses will be considered in subsequent NEPA documents that analyze specific projects or programs based on the information available at the time those analyses are prepared.

CEQ guidance directs the cumulative impacts analysis to focus on important issues of national, regional, or local significance. The analysis presented here focuses on alternative land management decisions in conjunction with other past, present, and reasonably foreseeable actions.

The cumulative impacts of past and present actions are represented through the description of the affected environment section for each resource in this EIS (CEQ 2005). Reasonably foreseeable future actions include proposed implementation-level projects, future management from State and local government plans, and future management from Federal land use plans. These reasonably foreseeable future actions include projects that are proposed or part of ongoing management plans. They do not include speculative actions (i.e., those not proposed or developed at a level to allow analysis) or pending management plans that have not progressed enough to develop proposed management (e.g., the ongoing Manti-La Sal National Forest LRMP revision). A list of these reasonably foreseeable future actions is found in Table RFFA-1. Estimated acres of disturbance from reasonably foreseeable future actions used in the cumulative impacts analyses are derived from the site-specific analyses of the reasonably foreseeable future actions listed in Table RFFA-1. These projections are not planning decisions, and using them in this analysis does not constitute approval by the BLM or any authorizing agency. Furthermore, these projections do not set a limit or cap on future agency actions. The projects listed are not presented as an exhaustive list of actions; however, every effort has been made to present a representative list of actions that could contribute to cumulative impacts.

Table RFFA-1. Reasonably Foreseeable Future Actions for Cumulative Impacts Analysis

Action or Project	Description	Disturbance or Description of Impacts
Exclosures Butler Wash (DOI-BLM-UT-Y020-2018-0031-CX)	Building a total of 300–363 feet of fence for protective enclosures/gap fences along Butler Wash to protect cultural resources	Shash Jáa Unit; 0.16 acre of disturbance
Harts Draw Water Wells (DOI-BLM-UT-Y020-2017-0014-EA and DOI-BLM-UT-Y020-2017-0044-EA)	Drilling a total of six wells with solar panels, tanks, troughs, and possibly a reservoir; constructing 334 feet of fence line	Indian Creek Unit; 2.0 acres of disturbance
House on Fire Trailhead (DOI-BLM-UT-Y020-2017-0042-EA)	Improving a parking area; mostly on slickrock. The area is used for hiking and backpacking only.	Shash Jáa Unit; approximately 2.0 acres of disturbance
Shay Canyon Trailhead (DOI-BLM-UT-Y020-2018-0013-EA)	Less than 3 acres of improvements in a previously disturbed area; improving a parking area and part of the trail. The area is used for hiking only.	Indian Creek Unit; approximately 3.0 acres of disturbance
Newspaper Rock Kiosk (DOI-BLM-UT-Y020-2017-0019-CX)	Placement of an educational kiosk	Indian Creek Unit; less than 3 square feet of disturbance

Action or Project	Description	Disturbance or Description of Impacts
Superbowl Campground Expansion; Bridger Jack Mesa Toilet (DOI-BLM-UT-Y020-2017-0041-EA)	Construction of a short hiking trail; campground improvements (toilets, 19 campsites)	Indian Creek Unit; approximately 2.0 acres of disturbance
Indian Creek Allotment Reservoirs (DOI-BLM-UT-Y020-2017-29-EA)	Construction of seven earthen reservoirs on the Indian Creek allotment to hold surface water run-off to provide reliable water, facilitate livestock distribution, and improve control of grazing patterns and forage use levels	Indian Creek Unit; approximately 2.5 acres of disturbance
Aneth Unit B223 and D223 APD (DOI-BLM-UT-Y020-2017-0009-EA)	Oil and gas development of two well pads located approximately 15 miles east of the Shash Jáa Unit	Outside of Planning Area; approximately 15.0 acres of disturbance
EOG Recapture 11-22H and 4-34 APDs (DOI-BLM-UT-Y020-2016-0066-EA)	EOG Resources has submitted applications to explore for and develop oil and gas resources located within leases in the Blanding subbasin oil and gas development area of San Juan County, Utah, located approximately 6 miles east of the Shash Jáa Unit.	Outside of Planning Area; approximately 20.0 acres of disturbance/8.3 acres of permanent disturbance
Three Buttes Paleontological Excavation (DOI-BLM-UT-Y020-2018-0007-EA)	Adan Huttenlocker to do new excavation (continuation of an existing permit)	Negligible
Red Hill #72 Paleontological Excavation (DOI-BLM-UT-Y020-2018-0009-EA)	Utah Geological Survey paleontology excavation at Black Mesa	Negligible
Reauthorize existing SRPs for both Units	Several motorized, backpacking, bicycling, hunting, and shuttle SRPs	Negligible. All SRPs require holders to "tread lightly, including practices such as pack everything out and stay on designated routes."
Renewal of motorized SRPs	OHV vehicle events at Arch Canyon, Hotel Rock, Hole-in-the-Rock, Woodenshoe, and Jacob's Chair routes	Negligible. All SRPs require holders to "tread lightly, including practices such as pack everything out and stay on designated routes."
ATV Trail in Indian Creek area (DOI-BLM-UT-Y020-2006-0005-EA)	Construction, maintenance, and use of 6.4 miles of ATV trails in the Indian Creek area near the Hamburger Rock and Creek Pasture Campgrounds	Indian Creek Unit; approximately 10 acres of disturbance (the majority of potential disturbance would occur outside the Planning Area)
Continued land management under Monticello RMP	BLM MFO RMP	MFO planning area management and reasonably foreseeable development as disclosed in the Monticello Proposed RMP and Final EIS (BLM 2008b)
Continued land management under the Manti-La Sal LRMP.	USFS Manti-La Sal LRMP	Manti-La Sal National Forest planning area management and reasonably foreseeable development
Easy Peasy Mine site exploration activities	Notice-level vanadium exploration activities at existing mine site approximately 2 miles outside the Monument boundary, east of the Shash Jáa Unit	Outside of Planning Area; approximately 1 acre of disturbance at previously disturbed mine site

The cumulative impacts analysis for each resource identifies which of those reasonably foreseeable future actions would impact that resource. The spatial scale of the cumulative impacts analysis varies for each resource and is the same as the analysis area used to establish the context and intensity of MMP impacts in Sections 3.4 through 3.21. The reasonably foreseeable actions used in this analysis are projected using a 15- to 20-year planning horizon.

3.22.2. Air Resources

The cumulative impacts of past and present actions on air quality are captured in the description of the affected environment (see Section 3.4.1). Reasonably foreseeable future actions total approximately 45 acres of surface disturbance and would cause a negligible contribution of PM_{10} emissions to cumulative air quality impacts. Areas around the Planning Area would continue to be managed under the Monticello RMP and the Manti-La Sal LRMP. Both of these plans do allow for oil and gas development and OHV use, which are main sources of pollutants in the airshed. Cumulatively, these actions would continue to impact air quality with trends forecasted as described under Section 2.1.2 of the AMS (BLM 2018a). These trends, based on past monitoring, indicate that cumulative air quality impacts have the possibility to cause NAAQS exceedances of ozone that could impact the Planning Area (BLM 2018a). Alternatives B, C, D, and E would contribute to ozone, PM_{10}, and GHG impacts through continued OHV use and continuing the use of wildland

fire and prescribed fire for vegetation management. Incremental contributions from motorized use on cumulative air quality impacts would depend on how much recreational visitation occurs at a given time and has the potential to be high during peak recreational use periods (BLM 2018a). Incremental contributions from wildland fire and prescribed fire would be small and localized due to the relatively low projected vegetation treatments. In terms of GHGs, cumulative impacts, including contributions from Alternatives B, C, D, and E, would be low. However, all alternatives would contribute cumulatively to global GHG emissions from other sources, as noted in Section 3.4.1. GHG emissions are linked to changes in climate, which could impact the Planning Area. These changes could include higher average temperatures and more severe drought conditions (BLM 2018a).

3.22.3. Cultural Resources

The cumulative impacts of past and present actions on cultural resources in the Planning Area are captured in the description of the affected environment (see Section 3.5.1). It is assumed that some cultural resources have experienced impacts from past visitation and looting. Reasonably foreseeable future actions with the potential to directly impact cultural resources through surface disturbance include the construction of livestock exclosures (<0.16 acre), construction and use of an ATV trail (approximately 10 acres, the majority of which would occur outside the Planning Area), expansion of existing trails and parking areas at Shay Canyon and House on Fire (approximately 5 acres), and expansion of facilities associated with the Superbowl Campground (approximately 2 acres, see Table RFFA-1). The total amount of disturbance associated with these developments is approximately 20 acres, 5 acres of which would occur in previously disturbed areas. These reasonably foreseeable future actions may also indirectly impact cultural resources by affecting the settings of cultural sites. However, these impacts would be located in areas where existing facilities have been and are currently located, resulting in minimal impacts to the setting above existing conditions. Cultural surveys and clearances would be required for these project approvals. Section 106 consultation under the NHPA would be implemented to address any potential adverse impacts to cultural resources.

Lands outside the Monument would continue to be managed according to the existing Monticello RMP and the Manti-La Sal LRMP. These include lands managed as VRM Classes III and IV and SMS Partial Retention and Modification, lands available for oil and gas development, timber harvest, OHV use, and other uses that may impact cultural resources. The RFD prepared in association with the 2008 Monticello RMP identified a reasonably foreseeable development of 195 wells in the general area outside the Planning Area over a 15-year period; the RFDs for the Moab MLP area (which includes portions of San Juan County within and outside the Planning Area) identified the reasonably foreseeable development of 128 oil and gas wells and the production of 36 million tons of potash over the next 15 years (BLM 2012, 2014). As noted in Section 3.22.14, actual oil and gas development has been far less than this predicted RFD. Continued management under these plans would allow for potential projects that could impact the setting of important cultural sites. The Monticello RMP and the Manti-La Sal LRMP also designated routes that directly or indirectly provide access to the Monument. Cumulative impacts to cultural resources from travel management would include but are not limited to disturbance from increased visitation and loss of site integrity because of vandalism. Management of cultural resources within the Monument under Alternatives B, C, D, and E would offset these impacts to an extent by providing for the maintenance of important viewsheds and managing visitation or, if necessary, closing areas with important cultural sites.

3.22.4. Fire Management

The cumulative impacts of past and present actions on fire management in the Planning Area are captured in the description of the affected environment (see Section 3.6.1). Reasonably foreseeable future actions with the potential to impact fire management are generally limited to projects for which there is a risk of human-caused wildfires or projects that substantially impact fuel loading or vegetation cover type. None of the site-specific, reasonably foreseeable future actions in the Planning Area would have these types of impacts.

Outside of the Planning Area, continuation of management prescribed in the Monticello RMP and the Manti-La Sal LRMP would allow for activities that increase the risk of wildfires that could affect Monument lands. Relevant activities include oil and gas development (25 acres of reasonably foreseeable future

development), recreational activities such as camping/campfire use or OHV use, and continued livestock grazing that could affect the extent of fine fuels such as invasive annual grasses (i.e., cheatgrass). Management of vegetation in the immediate vicinity of the Planning Area under the existing Monticello RMP and Manti-La Sal LRMP would continue, as needed, to address these risks and provide for continued ecological health. The options for prescribed fire and other fuel treatment projects to address fire risk, size, and intensity under Alternatives B–E would have countervailing effects on this potential cumulative impact.

3.22.5. Lands and Realty

The cumulative impacts of past and present actions on lands and realty in the Planning Area are captured in the description of the affected environment (see Section 3.7.1). An approved ATV trail in the Indian Creek area would have cumulative effects on lands and realty, as the action would result in the construction, maintenance, and use of a 6.4 mile trail near the Hamburger Rock and Creek Pasture Campgrounds. The BLM-administered trail would result in approximately 10 acres of disturbance, most of which would occur outside the Planning Area. This proposed ATV trail and all other reasonably foreseeable actions would be in accordance with FLPMA, the Recreation and Public Purposes Act, BLM Manual 6220, and other applicable BLM regulations. No ROW applications are pending or are reasonably foreseeable. Outside of the Planning Area, continuation of management prescribed in the Monticello RMP and the Manti-La Sal LRMP could affect lands and realty if approval of a linear ROW within either of those areas requires a connecting ROW approval within the Planning Area. Conversely, Alternatives B, C, D, and E would contribute cumulatively to these impacts by providing designated corridors and ROW avoidance and exclusion areas that would impact the routing of linear projects, especially those crossing the Monument Planning Area. In those cases, ROW routing and approvals would be addressed on a project-specific level with appropriate NEPA analysis.

3.22.6. Lands with Wilderness Characteristics

The cumulative impacts of past and present actions on lands with wilderness characteristics in the Planning Area are captured in the description of the affected environment (see Section 3.8.1) and are reflected in the acreage of land in the Planning Area that currently retains those characteristics. The approved Indian Creek ATV trail is located on lands with wilderness characteristics but would be constructed primarily outside the Planning Area. Any construction, maintenance, or use of the trail that occurred within the Planning Area on lands found to have wilderness characteristics could result in the loss of those characteristics in areas impacted. All other reasonably foreseeable future actions have the potential to disturb up to 10 additional acres in the Planning Area, but none of these developments would impact wilderness character either because they are compatible with maintenance of wilderness characteristics or they are not in or near areas with wilderness characteristics. Continued management under the Monticello RMP and the Manti-La Sal LRMP would allow for development and OHV use within 5 miles (foreground and middleground distance zones) of the Planning Area, which could result in visual and potential noise impacts that could cumulatively impact lands with wilderness characteristics in the Planning Area. All alternatives would contribute incrementally to those cumulative impacts by allowing OHV use within 0.5 mile or less of lands with wilderness characteristics. Management actions under all alternatives would also affect the inventoried lands with wilderness characteristics by managing for those characteristics for all lands that have them (Alternative B), managing for those characteristics on some of those lands (Alternative C), or not managing for those characteristics (Alternatives A, D, and E).

3.22.7. Livestock Grazing

The cumulative impacts of past and present actions on livestock grazing in the analysis area are captured in the description of the affected environment (see Section 3.9.1). Cumulative impacts to livestock grazing could result from activities on private lands adjacent to the Planning Area, activities scheduled for SITLA lands, and administrative actions on adjacent BLM-administered and USFS-administered lands on the Manti-La Sal National Forest. Reasonably foreseeable future actions that affect and have affected livestock grazing within the Planning Area include recreational developments, recreational uses (e.g., camping, hiking, OHV use, climbing), paleontological excavations, and proposed range improvements (see Table RFFA-1). Surface-disturbing activities, such as paleontological excavations and development of recreation sites, could contribute to a loss of available forage within the Planning Area. Other reasonably foreseeable

future actions, such as range improvements, would have beneficial impacts on livestock grazing; as water is a limiting factor for livestock in the analysis area, the construction of additional resources would allow for improved range management and livestock distribution. Because the total area of these reasonably foreseeable future actions would be very small (approximately 20 acres) when considered in the context of the analysis area, and even when combined with areas unavailable (BLM)/not suitable (USFS) for grazing under the alternatives, these actions would have negligible impacts to livestock grazing and would not decrease forage to a level that would affect adjudicated AUMs.

Management of lands in the vicinity of the Planning Area would continue under the existing Monticello RMP and Manti-La Sal LRMP. These plans would continue to manage livestock grazing with impacts similar to Alternative A and would continue to authorize livestock grazing. It is likely that adjacent lands would see an increase in land uses (such as development and recreation) and the Planning Area would see an increase in recreational use that may influence future available resources within the analysis area. The incremental contribution of Alternatives B, C, D, or E on the cumulative impacts to livestock grazing would include making areas unavailable (BLM)/not suitable (USFS) to grazing. However, it should be noted that this cumulative impact would be negligible, as these areas proposed for closure are not currently being grazed, have topography that is difficult to graze, or contain minimal acreage in relation to the scale of the affected allotment.

3.22.8. Paleontological and Geological Resources

The cumulative impacts of past and present actions on paleontological and geologic resources in the Planning Area are captured in the description of the affected environment (see Section 3.10.1). Reasonably foreseeable future actions with the potential to impact paleontological and geologic resources through surface disturbance include proposed range improvements, recreational uses (e.g., camping, hiking, OHV use, climbing), and recreational developments (see Table RFFA-1). The total amount of disturbance associated with these developments is approximately 20 acres, 5 acres of which would occur in previously disturbed areas. The proposed paleontological excavations would beneficially affect paleontological resources by providing a mechanism for the recovery of paleontological resources in a manner that retains their scientific and educational value. Reasonably foreseeable management in the Monticello RMP and the Manti-La Sal LRMP would not cumulatively impact paleontological resources in the Planning Area.

3.22.9. Recreation

The cumulative impacts of past and present actions on recreation in the Planning Area are captured in the description of the affected environment (see Section 3.11.1). Reasonably foreseeable future actions with the potential to impact recreation include specific proposed range improvements, recreational developments, SRPs, and paleontological excavations (see Table RFFA-1). The recreational developments would include improvements at one campsite and two trailheads, the installation of an information kiosk, and the construction, maintenance, and use of an ATV trail, totaling approximately 17.5 acres of surface disturbance. The action alternatives would contribute cumulatively to these recreational impacts by issuing more SRPs and by managing both frontcountry and dispersed backcountry opportunities for visitors. Proposed range improvements and paleontological excavation-related surface disturbance would comprise approximately 1 acre and, when considered in terms of the overall size of the Planning Area, would have negligible cumulative impacts on recreation.

Areas outside the Planning Area have the potential to cumulatively impact recreational settings within the Planning Area through noise and dust resulting from OHV activities, visual contrast and noise from potential development, the spread of invasive species, and wildland fire. Management of recreational opportunities and settings in the immediate vicinity of the Planning Area under the existing Monticello RMP and Manti-La Sal LRMP would continue, as needed, to address these risks and provide additional recreational opportunities. The recreation management under Alternatives B, C, D, E would contribute incrementally to these cumulative impacts by similarly managing for recreational experiences within the Monument.

3.22.10. Riparian, Wetland, and Water Resources

The cumulative impacts of past and present actions on riparian, wetland, and water resources are captured in the description of the affected environment (see Section 3.12.1). Reasonably foreseeable future actions in the Planning Area include 20 acres of surface disturbance associated with range improvements, recreational developments, recreational uses (e.g., camping, hiking, OHV use, climbing), and paleontological excavations (see Table RFFA-1) that may result in erosion and sedimentation that could affect downstream water resources. Range improvements such as reservoir development and the continuation of livestock grazing permits also have the potential to affect water quality (e.g., high fecal coliform bacteria concentrations) or quantity (i.e., flow), with resulting impacts to riparian or wetland vegetation. Conversely, potential livestock exclosure projects and off-site water developments would help protect and improve riparian habitat.

Outside the Planning Area, continuation of management prescribed in the Monticello RMP and Manti-La Sal LRMP would allow for developments with the potential to contribute cumulatively to riparian, wetland, and water resource impacts within the same HUC 10 watersheds impacted by Alternatives A, B, C, D, and E. Relevant activities include oil and gas development, timber harvest, recreation, grazing and OHV use. These impacts would be offset to an extent by requirements in these plans that preclude disturbance in sensitive soils and identify disturbance avoidance buffers around wetland and riparian areas and floodplains. Alternatives A, B, C, D, and E would contribute incrementally to the impacts through allowance of similar activities, and impacts would be similarly offset by requirements for similar protective measures.

3.22.11. Soil Resources

The cumulative impacts of past and present actions on soils in the Planning Area are captured in the description of the affected environment (see Section 3.13.1). Reasonably foreseeable future actions with the potential to impact soils include specific proposed range improvements, recreational developments (an ATV trail, trailheads, and a kiosk), recreational uses (e.g., camping, hiking, OHV use, climbing), and paleontological excavations (see Table RFFA-1). The total amount of disturbance associated with these developments is approximately 20 acres, none of which would occur in sensitive soils, and approximately 5 acres of which would occur in previously disturbed areas. Management of soils in watersheds impacted by Alternatives A, B, C, D, and E would also be impacted by continued management under the Monticello RMP and Manti-La Sal LRMP. Those plans allow for developments that have the potential to contribute cumulatively to soil impacts in these watersheds. These activities include oil and gas development, timber harvest, recreation, grazing, and OHV use. These impacts would be offset to an extent by requirements in these plans that preclude disturbance on steep slopes and other areas with sensitive soils. Alternatives A, B, C, D, and E would contribute incrementally to the impacts through allowance of similar activities and requirements for similar protective measures.

3.22.12. Special Designations

The cumulative impacts of past and present actions on special designations in the Planning Area are captured in the description of the affected environment (see Section 3.14.1). Specific reasonably foreseeable actions within the Planning Area (see Table RFFA-1) would not impact the relevant and important values of these ACECs. Future management under the Monticello RMP and the Manti-La Sal LRMP would not impact the Lavender Mesa ACEC or Shay Canyon ACEC, both of which are entirely within the Monument Planning Area. However, continued management of the San Juan River ACEC under the Monticello RMP would impact the portion of the San Juan River ACEC within the Planning Area. The Monticello RMP would continue to manage for the relevant and important values of those portions of the San Juan River ACEC that are outside the Planning Area, which would contribute to maintaining these same relevant and important values for that portion of the ACEC within the Planning Area. Alternatives B, C, D, and E would contribute cumulatively to managing for these same values through the management of ROWs, camping, and the issuance of SRPs.

3.22.13. Special Status Species

The cumulative impacts of past and present actions on special status species in the Planning Area are captured in the description of the affected environment (see Section 3.15.1). Reasonably foreseeable

future actions with the potential to impact western yellow-billed cuckoo, southwestern willow flycatcher, Mexican spotted owl, peregrine falcon, northern goshawk, bald eagle, razorback sucker, special status bat species, kit fox, Gunnison's prairie dog, silky pocket mouse, and special status plant species include specific proposed range improvements, recreational developments, recreational uses (e.g., camping, hiking, OHV use, climbing), SRPs, paleontological excavations, water withdrawals, and oil and gas leasing (see Table RFFA-1). Surface-disturbing activities, such as paleontological excavations, range improvements, and development of recreation sites, could contribute to loss of available habitat (up to 18.5 acres, depending on habitat type) within the Planning Area. However, as the majority of the surface disturbance would occur in existing disturbed areas (approximately 5 acres) and dry shrubland (approximately 13.5 acres), the action alternatives would contribute negligible cumulative impacts to special status species habitats within the Planning Area. The proposed range improvements, including the construction of new reservoirs, could provide additional water resources for special status wildlife species. Proposed fencing associated with these improvements could provide for better rangeland management and protection of sensitive habitats.

Management of Federal lands in the immediate vicinity of the Planning Area would continue under the existing Monticello RMP and Manti-La Sal LRMP. These plans allow for OHV use, mineral development, similar recreation management levels, and ROWs that impact habitat for special status species. These plans also include requirements to manage those activities to ensure compliance with the ESA, as well as BLM and USFS policies for sensitive species. Management of ESA-listed wildlife and plant species (i.e., western yellow-billed cuckoo, southwestern willow flycatcher, Mexican spotted owl, Colorado pikeminnow, razorback sucker, and Navajo sedge) would also be implemented through their respective recovery plans. The protections provided by the ESA, combined with management outlined in the recovery plans, would prevent cumulative impacts from having a significant adverse impact on listed species.

The BLM- and USFS-sensitive plant and animal species habitats adjacent to the Planning Area would be managed under the Monticello RMP and the Manti-La Sal LRMP. These plans would continue to manage these species and activities that impact these species to prevent Federal listing under the ESA. Additionally, these and other non-listed sensitive wildlife species would also be managed under the Utah State Wildlife Action Plan. Alternatives B, C, D, and E would contribute to these cumulative impacts by maintaining similar recreation use levels and use of areas that include habitat for these species. However, these alternatives also include requirements to provide for this use while still meeting the ESA and other Federal and State policies with regard to these species.

3.22.14. Social and Economic Considerations

The cumulative impacts of past and present actions on socioeconomics in San Juan County are captured in the description of the affected environment (see Section 3.16.1). Reasonably foreseeable future actions that would impact the socioeconomics of the county include implementation of the San Juan County Plan, which promotes increased recreational visitation. As part of this, San Juan County has developed an ATV/OHV trail system, which it posts on its website. This includes detailed maps for OHV trails throughout the Planning Area and surrounding area. Increased recreational visitation to the Planning Area and surrounding area is promoted by the State of Utah Office of Tourism, which identifies the Planning Area and surrounding area specifically on its website. Cumulative increases in recreational visitation due to these efforts provide positive economic benefits in the form of increased spending at local retailers. Reasonably foreseeable mineral development in the region also has the potential to contribute cumulatively to the local economy. The RFD prepared in association with the 2008 Monticello RMP identified a reasonably foreseeable development of 195 wells in the general area outside the Planning Area for a 15-year period; the RFDs for the Moab Master Leasing Plan (MLP) (BLM 2016) area (which includes portions of San Juan County within and outside the Planning Area) identified reasonably foreseeable development of 128 oil and gas wells between 2005 and 2025. However, from 2009 to 2018, only 22 wells were drilled in the MFO. Accordingly, actual development has been far below the predicted RFD. In addition to oil and gas development, the RFD for potash production estimates that 36 million tons of potash would be produced over the next 15 years (BLM 2012, 2014). Additional development of potash or oil and gas wells in the area provides an opportunity for local jobs (an estimated 430 direct, indirect, and induced jobs per year from oil or gas and potash developments and operations over the 15-year life of the

MLP [BLM 2016]) and could bring additional tax and royalty revenue to the counties (BLM 2008a). Both the Monticello RMP and the Manti-La Sal LRMP offer social and economic benefits by providing continued woodland harvest, which benefits residents of San Juan County (AMS Appendix C, Section 5.5). Alternatives B, C, D, and E would contribute to these cumulative socioeconomic impacts by maintaining similar recreation use levels for Monument objects and values and providing for the long-term sustainability of these resources, which would contribute to cumulative increases in recreational visitation. Additionally, Alternatives B, C, D, and E provide opportunities for continued woodland harvest to support local needs. Private lands and landowners—notably, the Dugout Ranch, which has the largest private inholding within the BENM—could experience cumulative impacts from the decisions in the MMPs/EIS and anticipated increases in recreational visitation to the BENM. These impacts may include unauthorized access to private property and associated property and resource damage, disruptions or other impacts on livestock grazing operations, and other impacts from increased visitor activity such as increased risk of wildland fire.

3.22.15. Travel and Transportation

The cumulative impacts of past and present actions on travel and transportation management in the Planning Area are captured in the description of the affected environment (see Section 3.17.1). Reasonably foreseeable future actions with the potential to impact travel and transportation management include specific recreational developments (i.e., two trailheads with parking areas and an ATV trail in the Indian Creek area) and motorized SRPs (see Table RFFA-1). Use of OHVs to access improved recreational trailheads could increase but would be localized to those areas where proposed improved recreational facilities would be located (e.g., Shay Canyon and House on Fire trailheads). Future reissuance of motorized SRPs/SUAs in the Planning Area would be required to adhere to existing travel and transportation management until this plan is completed and would not substantively impact travel in the Planning Area. Additionally, because Alternatives B, C, D, and E make plan-level allocation travel management decisions only and because no areas within the Planning Area would be open to unlimited OHV use, the cumulative impacts of these reasonably foreseeable actions and Alternatives B, C, D, and E would be negligible.

Land management in the immediate vicinity of the Planning Area would continue under the existing Monticello RMP and Manti-La Sal LRMP. These plans would continue to manage OHVs with impacts similar to those under Alternative A and would continue to provide access on designated and/or existing routes that connect to routes accessing areas within the Planning Area.

3.22.16. Vegetation

The cumulative impacts of past and present actions on vegetation in the Planning Area are captured in the description of the affected environment (see Section 3.18.1). Reasonably foreseeable future actions with the potential to impact vegetation include specific proposed range improvements, recreational developments (an ATV trail, trailheads, and a kiosk), recreational uses (e.g., camping, hiking, OHV use, climbing), and paleontological excavations (see Table RFFA-1). The total amount of disturbance associated with these developments is approximately 20 acres. This disturbance would largely be in dry shrubland/grassland or previously disturbed areas. Alternatives B, C, D, and E would contribute cumulatively to these impacts by allowing for future grazing and recreational developments, as needed, over the life of the plan. Additionally, these alternatives would provide vegetation treatment, rehabilitation, and reclamation, as necessary, to maintain long-term vegetation health, which would offset cumulative vegetation impacts from continued small-scale development in the Planning Area.

Areas outside of the Monument have the potential to cumulatively impact vegetation within the Planning Area through the spread invasive species and wildland fire. Management of vegetation in the immediate vicinity of the Planning Area under the existing Monticello RMP and Manti-La Sal LRMP would continue, as needed, to address these risks and provide for continued ecological health. The vegetation management under Alternatives B, C, D, and E would have countervailing effects on potential indirect cumulative impacts.

3.22.17. Visual Resource Management

The cumulative impacts of past and present actions on visual resources are captured in the description of the affected environment (see Section 3.19.1) and the current VRI for the Planning Area. Reasonably

foreseeable future actions within the Planning Area with the potential to impact visual resources include the construction of livestock exclosures (<0.16 acre), construction of stock watering reservoirs (2.5 acres), expansion of existing trails and parking areas at Shay Canyon and House on Fire (approximately 5 acres), expansion of facilities associated with the Superbowl Campground (approximately 2 acres), and construction, maintenance, and use of an ATV trail in the Indian Creek area (approximately 10 acres, the majority of which would occur outside the Planning Area) (see Table RFFA-1). Visual impacts from livestock exclosures and stock watering reservoirs would be relatively small and generally consistent with the agrarian nature of the Planning Area and with other livestock grazing improvements. Visual impacts from recreational facilities would be localized to those areas where existing recreational facilities have been and are currently located and would be within the expectations of Monument visitors. While the proposed ATV trail would be constructed outside the Planning Area, visual impacts would be visible from points directly adjacent to the Planning Area. Visual impacts from an ATV trail would include an expansion of exposed soil, construction and presence of a blocky kiosk, and the presence of parked vehicles. The majority of the ATV trail would be constructed on existing, user-created trails and would meet the objectives for VRM Class II using mitigation measures.

Reasonably foreseeable actions outside the Planning Area that could contribute to visual impacts include proposed oil and gas or potash developments. The RFD prepared in association with the 2008 Monticello RMP identified a reasonably foreseeable development of 195 wells in the general area outside the Planning Area over a 15-year period; the RFDs for the Moab MLP area (which includes portions of San Juan County within and outside the Planning Area) identified the reasonably foreseeable development of 128 oil and gas wells and the production of 36 million tons of potash over the next 15 years (BLM 2012, 2014). As noted in Section 3.22.14, actual oil and gas development has been far less than this predicted RFD. Any specific oil and gas or potash development that occurs within 5 miles of the Planning Area (the visual background is the foreground and middleground) has the potential to impact viewpoints in the Planning Area. There are two specific proposed oil and gas developments, one approximately 15 miles east of the Shash Jáa Unit (15 acres of disturbance) and one 6 miles east of the Shash Jáa Unit (20 acres of disturbance). Although these actions may be distantly visible from portions of the Planning Area, they would have a low impact on visitors due to their small size and distance from the Planning Area (visual background is > 5 miles).

Lands 1 to 15 miles from the Planning Area would continue to be managed according to the existing Monticello RMP and the Manti-La Sal LRMP. These include lands managed as VRM Classes III and IV and SMS Partial Retention and Modification. Continued management under these plans would allow for potential oil and gas or potash projects within the foreground and middleground distance zone that could impact visual quality and visitor experience within the Monument. Management of visual resources within the Planning Area under Alternatives B, C, D, and E would offset these impacts to an extent by providing for maintenance of highly scenic areas.

3.22.18. Wildlife and Fisheries

The cumulative impacts of past and present actions on wildlife in the Planning Area are captured in the description of the affected environment (see Section 3.20.1). Reasonably foreseeable future actions with the potential to impact wildlife species within the wildlife/fisheries and big game analysis areas (the HUC 10 watersheds and UDWR-delineated hunting management units crossed by the Planning Area, respectively) include specific proposed range improvements, recreational developments (an ATV trail, trailheads, and a kiosk), recreational uses (e.g., camping, hiking, OHV use, climbing), oil and gas exploration and development (outside Planning Area but within the analysis area), and paleontological excavations (see Table RFFA-1), all of which may result in the temporary displacement of wildlife as a result of noise and human presence. Potential cumulative impacts on big game migration could occur; however, a site-specific analysis of impacts is not possible because, as noted in Section 3.20.11, most big game seasonal movements in Utah are elevational, and the UDWR has not mapped migration corridors in the Planning Area to date. The total amount of surface disturbance associated with these developments is approximately 20 acres. Construction requirements for these proposed projects would minimize sedimentation that could affect fish species. Recreation project disturbances would be located partially in dry shrubland/grassland that provides habitat for big game and some avian species or in previously

disturbed recreation areas offering minimal habitat for wildlife. Reasonably foreseeable livestock projects include the development of enclosures that would help protect riparian habitat important for amphibian species and some species of migratory birds. Development of water sources for livestock would benefit wildlife. Alternatives A, B, C, D, and E would contribute cumulatively to these impacts by allowing for future grazing, OHV use, woodland harvest, and ROW development over the life of the plan. However, these alternatives also provide vegetation treatment, rehabilitation, and reclamation as necessary to maintain long-term vegetation health, which would countervail wildlife habitat impacts from the reasonably foreseeable projects in the Planning Area. Under all alternatives, priority would be given to meeting or making progress toward meeting the *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah* (BLM 1997) or to USFS desired conditions for rangelands, thus minimizing potential impacts from livestock grazing.

Management plans for lands outside of the Monument would allow for developments with the potential to contribute cumulatively to wildlife impacts within the same HUC 10 watersheds impacted by Alternatives A, B, C, D, and E. Future management under the Monticello RMP and Manti-La Sal Forest LRMP would continue to allow activities, including oil and gas development, timber harvest, recreation, grazing and OHV use. Vegetation management in the immediate vicinity of the Planning Area under the existing Monticello RMP and Manti-La Sal LRMP would continue, as needed, to minimize impacts from these resource uses and maintain continued ecological health. The vegetation management under Alternatives B, C, D, and E would contribute to these cumulative impacts by managing vegetation to maintain the ecological health of existing wildlife habitat.

3.22.19. Forestry and Woodlands

The cumulative impacts of past and present management actions on woodlands in the Planning Area are captured in the description of the affected environment (see Section 3.21.1). Reasonably foreseeable future management actions with the potential to affect woodland harvest areas or access to woodland harvest areas include specific proposed range improvements, recreational developments (an ATV trail, trailheads, and a kiosk), recreational uses (e.g., camping, hiking, OHV use, climbing), and paleontological excavations (see Table RFFA-1). The total amount of disturbance associated with these developments is approximately 20 acres. This disturbance would be largely in dry shrubland/grassland or previously disturbed areas and would have little to no impact on available woodland harvest or access.

Management of forests and woodlands in the immediate vicinity of the Planning Area would continue under the existing Monticello RMP and Manti-La Sal LRMP. These plans would continue to manage woodlands with impacts similar to Alternative A. This includes providing for varying levels of forest and non-timber forest product harvest and access on designated routes that connect to routes accessing woodland harvest areas within the Planning Area. Vegetation treatments and woodland salvage would continue, as needed, to provide for forest products harvest while reducing wildland fire risk and providing for continued ecological health in areas bordering the Planning Area. These cumulative impacts would be contributed to by continued similar woodlands management under Alternatives B, C, D, and E.

CHAPTER 4. CONSULTATION AND COORDINATION

This chapter describes efforts taken by the BLM and the USFS to comply with legal requirements to involve the public in the development of the MMPs/EIS and consult and coordinate with various government agencies. These efforts include public scoping; identifying, designating, and working closely with cooperating agencies; consulting with applicable Federal agencies and State, local, and Tribal governments; and working with State and local governments and Tribes to identify "any known inconsistencies with State or local plans, policies or programs" (43 CFR 1610.3-2(e)).

4.1. Public and Agency Involvement

4.1.1. Public Scoping

The scoping period began with the publication of the Notice of Intent (NOI) in the *Federal Register* on January 16, 2018, and extended through April 11, 2018. During the scoping period, the BLM and the USFS sought public comments to identify issues to be addressed in the MMPs and EIS. Public scoping meetings were held in the communities of Bluff and Blanding, Utah. In all, 165,466 submissions were received from the public during the scoping period.

Information about scoping meetings, comments received, comment analysis, and issue development can be found in the scoping report available on the BLM's ePlanning website at https://goo.gl/XFr6V4.

4.1.2. Endangered Species Act Section 7 Consultation

As part of ongoing communications between Federal agencies, the USFWS was invited to review internal documents that preceded publication of the Draft and Final EIS. Information received from the USFWS, including recommended conservation measures, has been incorporated into the MMPs/EIS. Additionally, the BLM and USFS are jointly preparing a Biological Assessment to evaluate the potential impacts of the Proposed MMPs on species listed as threatened or endangered under the ESA and on designated critical habitats within the Planning Area. During the preparation of the Biological Assessment, the agencies engaged in informal discussions regarding the species and habitats present in the Planning Area and the likely effects of the Proposed MMPs. The USFWS was also provided with an opportunity to review and comment on the draft Biological Assessment, and the agencies engaged in informal telephone calls to discuss the analysis and associated management actions, stipulations, and BMPs. The BLM and the USFS will submit the Biological Assessment to the USFWS to initiate formal Section 7 consultation. The BLM and USFS would not sign Records of Decision until the USFWS issues a Biological Opinion and the formal Section 7 consultation is complete.

4.1.3. National Historic Preservation Act Section 106 Consultation

At the beginning of the scoping process, the BLM and USFS notified the public that they would coordinate their public consultation obligations under the NHPA (54 USC 306108) through this NEPA process as provided for in 36 CFR 800.2(d)(3). The BLM will consult with the SHPO as per the implementing regulations for 54 USC 306108 found at 36 CFR 800. The SHPO, through the PLPCO, has participated in development of this EIS as a cooperating agency. This has afforded the SHPO with the opportunity to review internal documents that preceded publication of the Draft and Final EIS, including the alternatives and environmental analysis. Information submitted by the SHPO through PLPCO has been incorporated into the document as appropriate.

During the scoping process, numerous commenters requested to be consulting parties. The BLM, in consultation with the SHPO, determined that it would undertake additional consultation with consulting parties, as identified in Table 4-1. On December 14, 2018, the agencies sent a letter inviting the organizations and local governments to participate as consulting parties. In the letter, the agencies also asked for additional information about the potential effects on historic properties that the consulting parties had not already provided. The agencies also provided a list of Public Use sites provided in the Draft MMPs/EIS, about which the agencies wanted further input. In a letter sent on January 30, 2019, the agencies invited the consulting parties to a meeting on February 28, 2019. The agencies also invited the

Tribes to the consulting parties meeting on February 28, 2019, in addition to the government-to-government consultation meeting on February 27, 2019.

Eleven consulting parties and two Tribes attended the February 28, 2019, meeting in person or over the telephone. Those parties included all or parts of the Utah Professional Archaeological Council, the Utah Rock Art Research Association, Friends of Cedar Mesa, the National Trust for Historic Preservation, Utah Diné Bikéyah, Edge of the Cedars State Park and Museum, the Utah Public Lands Policy and Coordination Office, the Hole in the Rock Foundation, the San Juan County Historical Society, the Town of Bluff, and San Juan County. The Tribes represented were the Pueblo of Santa Clara and the Pueblo of Laguna. At this meeting, the agencies provided an overview of the information detailed in the letter. The consulting parties, Tribes, and agencies discussed the Public Use Sites, historic properties, and potential impacts from the management actions in the BENM. The BLM received formal comments concerning historic properties from consulting parties after the meeting. The BLM also sent a letter to certain consulting parties clarifying their status as consulting parties and clarifying the Section 106 process for the MMPs/EIS.

The BLM sent consulting parties and the Utah SHPO a letter on June 10, 2019, updating them on the BENM MMPs/EIS planning process. The BLM included meeting notes from the February 28, 2019, meeting as an attachment to that letter. In the letter, the BLM invited consulting parties to another meeting concerning historic properties for the BENM MMPs on July 30, 2019. Additional Section 106 consultation activities and meetings will occur throughout the remainder of the development of the MMPs/EIS. Additional Section 106 consultation activities and meetings will occur throughout the remainder of the development of the MMPs/EIS.

Table 4-1. Consulting Parties

Utah Rock Art Research Association	San Juan County Historical Society
Friends of Cedar Mesa	Edge of the Cedars State Park and Museum
Utah Professional Archaeological Council	Utah School and Institutional Trust Lands Administration
National Trust for Historic Preservation	San Juan County
Utah Diné Bikéyah	Public Lands Policy and Coordinating Office
Hole in the Rock Foundation	City of Blanding
Monticello City	Town of Bluff
Utah Statewide Archaeological Society	

4.1.4. Economic Strategies Workshop

The BLM and USFS conducted an economic strategies workshop in Monticello, Utah, on June 6, 2018. The purpose of the workshop was to discuss the issues related to the local economies and social conditions of the counties, towns, and cities in and around the Planning Area. Information provided by the public during the socioeconomic workshop has been incorporated in the analysis contained in this EIS.

4.1.5. Response to Public Comment on the Draft Environmental Impact Statement

The BLM and USFS published the Notice of Availability (NOA) of the Draft MMPs/EIS in the *Federal Register* on August 17, 2018. The publication of the NOA began a 90-day public comment period that ended on November 15, 2018. Comments on the Draft MMPs/EIS were accepted by the BLM and USFS using U.S. Postal Service mail, email, and hard copies at BLM and USFS offices during the comment period.

In October 2018, midway through the public comment period, the BLM and USFS hosted three open house–style public meetings to provide the public with opportunities to speak with representatives of the BLM and USFS, ask questions, and submit comments on the Draft MMPs/EIS. The BLM notified the public of these meetings via the project website and a news release. The meetings were held on October 2, 2018, in Blanding, Utah; on October 3, 2018, in Bluff, Utah; and on October 4, 2018, in Montezuma Creek, Utah.

In all, 250,484 submittals were provided to the BLM and USFS during the 90-day comment period; 98.4% of the submittals received were part of organized letter writing campaigns. All comments on the Draft EIS were given equal consideration, regardless of the method of submittal and whether or not the submittal

was part of an organized letter writing campaign. In response to the substantive comments received, the BLM and USFS either modified alternatives considered in the MMPs/EIS, considered new alternatives not addressed in the Draft MMPs/EIS, made corrections to analysis or data used in the MMPs/EIS, or explained why the comments do not warrant further agency response. The substantive comments received, the BLM's and USFS's response to comments, and additional information regarding the comment receipt and response process are included in Appendix O: Responses to Public Comments on the Bears Ears National Monument, Draft Monument Management Plans and Environmental Impact Statement, Shash Jáa and Indian Creek Units.

4.1.6. Future Public Involvement

The NOA and Dear Reader letter for this Proposed MMPs/Final EIS outline procedures to protest the approval of land use planning decisions in the Proposed MMPs during the 30-day period after the NOA 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 NOA for the Proposed MMPs/Final EIS is published in the *Federal Register*. A ROD will be issued following the Governor's Consistency Review period, response to comments on the proposed target shooting closure, and resolution of protests on the Proposed MMPs/Final EIS.

4.2. Cooperating Agencies

Federal regulations direct the BLM and USFS to invite eligible Federal agencies, State and local governments, and Federally recognized American Indian Tribes to participate as cooperating agencies when drafting an EIS. The groups listed in Table 4-2 were invited to participate in the preparation of the MMPs/EIS as cooperating agencies. Other agencies requested cooperating agency status as part of their scoping comments.

Table 4-2. Invited Cooperating Agencies

Agencies and Tribes Invited to be Cooperating Agencies	Agencies and Tribes that Accepted	Agencies and Tribes Invited to be Cooperating Agencies	Agencies and Tribes that Accepted
Blanding City	X	Pueblo of San Ildefonso	
Monticello City	X	Pueblo of Sandia	
Confederated Tribes of the Goshute Indian Reservation		Pueblo of Santa Ana	
Grand County Council		Pueblo of Santa Clara	
Hopi Tribe		Pueblo of Santo Domingo (Kewa)	
Kaibab Band of Paiute Indians	X	Pueblo of Taos	
National Park Service	X	Pueblo of Tesuque	
Navajo Nation		Pueblo of Ysleta del Sur	
Northwest Band of the Shoshone Nation		Pueblo of Zia	
Paiute Indian Tribe of Utah		Pueblo of Zuni	
Pueblo of Acoma		San Juan County	X
Pueblo of Cochiti		Skull Valley Band of Goshute Indians	
Pueblo of Isleta		Southern Ute Tribe	
Pueblo of Jemez		State of Utah	X
Pueblo of Laguna		State of Utah School and Institutional Trust Lands Administration	X
Pueblo of Nambe		Ute Indian Tribe of the Uintah and Ouray Reservation	
Pueblo of Ohkay Owingeh		U.S. Forest Service	X
Pueblo of Picuris		Ute Mountain Ute Tribe	
Pueblo of Pojoaque		White Mesa Community of the Ute Mountain Ute Tribe	
Pueblo of San Felipe	X		

The BLM and USFS worked closely with the cooperating agencies to develop alternatives and guide the analysis contained in the EIS. This process included a review of the issues raised during scoping, cooperating agency workshops held during the alternatives development process, and reviews of the analysis contained in the Draft EIS and Final EIS. Cooperating agency involvement was initiated during the scoping process and has continued throughout the publication of the Proposed MMPs/Final EIS.

4.3. Shash Jáa Commission

Proclamation 9558 established the Bears Ears Commission, composed of one elected officer each from the Hopi Tribe, Navajo Nation, Ute Mountain Ute Tribe, Ute Indian Tribe of the Uintah and Ouray Reservation, and Pueblo of Zuni, as designated by the officers' respective Tribes. Proclamation 9558 directed the BLM and USFS to "meaningfully engage the Commission or, should the Commission no longer exist, the Tribal governments through some other entity composed of elected Tribal government officers (comparable entity), in the development of the management plan and to inform subsequent management of the monument." Proclamation 9681 renamed the Bears Ears Commission the Shash Jáa Commission and modified Proclamation 9558 to clarify that the Shash Jáa Commission shall apply only to the Shash Jáa Unit and shall also include the elected officer of the San Juan County Commission representing District 3 acting in that officer's official capacity.

On March 16, 2018, the BLM and USFS sent letters to the Hopi Tribe, Navajo Nation, Ute Mountain Ute Tribe, Ute Indian Tribe of the Uintah and Ouray Reservation, and Pueblo of Zuni inviting Tribal leaders to participate in an organizational meeting of the Shash Jáa Commission. The elected officer of the San Juan County Commission representing District 3 was also invited to attend. On April 6, 2018, State Director Ed Roberson and Canyon Country District Manager Lance Porter hosted a meeting of the Shash Jáa Commission in Moab, Utah, but no leaders from the five Tribes identified in Proclamation 9558 nor the representatives from the San Juan County Commission attended. On the afternoon of April 6, 2018, the five Tribes identified in the Proclamation (also referred to as the Bears Ears Inter-Tribal Coalition) notified the BLM and USFS in writing that they would not attend Shash Jáa Commission meetings. The Bears Ears Inter-Tribal Coalition further indicated that they would work with the agencies through government-to-government consultation. The five American Indian Tribes that were to be represented on the Shash Jáa Commission also have been invited to participate in the development of the MMPs/EIS as cooperating agencies. The BLM and USFS are also consulting with the Tribes as required by the NHPA and will continue to encourage the Tribes and San Juan County to participate in the Shash Jáa Commission.

The BLM and USFS drafted an American Indian Tribal Collaboration Framework (see Appendix F) to provide structure and meaning to future collaboration and consultation with the Shash Jáa Commission and interested Tribes as the agencies move toward final planning and establishment of the MMPs. This collaboration framework was shared with the Shash Jáa Commission and the interested Tribes as an attachment to a letter dated July 13, 2018. The July 13, 2018, letter included an invitation to the Shash Jáa Commission and interested Tribes to participate in a conference call held on July 25, 2018, and to attend a consultation meeting on August 30, 2018. Representatives from the Pueblos of Acoma and San Felipe and from the Kaibab Band of Paiute Indians, the Paiute Indian Tribe of Utah, the USFS, and the BLM participated in the call. A follow-up email for this conference call was sent to the Shash Jáa Commission and interested Tribes on July 30, 2018, that included the American Indian Tribal Collaboration Framework. The email was also sent to Tribal governments and representatives of the Navajo Nation, Hopi Tribe, Uintah and Ouray Ute, Ute Mountain Ute, and Zuni (Tribes that comprise the Bears Ears Inter-Tribal Coalition). The email included a reminder of the meeting that was to be held on August 30, 2018.

Representatives of the Bears Ears Inter-Tribal Coalition attended a meeting that was scheduled for all Tribes on August 29, 2018. At the end of the meeting on August 29, representatives from the Bears Ears Inter-Tribal Coalition verbally stated to Mr. Porter, Canyon Country District Manager, that they would not be attending the Shash Jáa Commission meeting on August 30, 2018. Mr. Porter and other BLM representatives attended the August 30 meeting, but no Tribal leaders or representatives attended.

Since August 2018, the BLM and USFS attempted to engage representatives of organizations that comprise the Shash Jáa Commission and remind them of the opportunity to participate in the Commission. During this and other outreach completed by the BLM and USFS, the entities that comprise

the Shash Jáa Commission have not indicated an interest in convening a meeting of the Shash Jáa Commission.

The BLM and USFS are closely engaging with Tribes through government-to-government consultation and as cooperating agencies and will continue to attempt to engage with the Shash Jáa Commission during the preparation and implementation of the MMPs in recognition of the importance of Tribal participation in the proper care and management of the objects within the BENM and to ensure that management decisions affecting the Monument reflect and are informed by Tribal expertise and traditional and historical knowledge.

4.4. American Indian Tribal Consultation and Coordination

Federal law requires the BLM and USFS to consult with American Indian Tribes during the planning/NEPA process. On approximately April 20, 2018, the agencies sent invitations to more than 30 Tribes inviting them to participate in a consultation meeting held in Bluff, Utah (Table 4-3). On May 10, 2018, BLM Utah leadership, including State Director Roberson and Canyon Country District Manager Porter, hosted an initial Tribal consultation meeting with the Tribes that were able to attend. Of the 30 Tribes invited to participate, 11 Tribal members representing seven Tribes attended the May 10 meeting. The meeting format was arranged to allow for Tribal members to meet individually with the BLM and USFS in the morning and for a joint meeting with all those present in the afternoon. Several BLM staff attended this meeting, including the State Director, District Manager, Project Manager, and several resource specialists. The USFS District Ranger and two members of the planning team from the Manti-La Sal National Forest also attended the meeting. The Tribal representatives present chose to forego the individual morning meetings and decided to meet as a group for the day. Tribes that were present were the Kaibab Band of Paiute Indians, Paiute Indian Tribe of Utah, Pueblo of Acoma, Pueblo of Laguna, Pueblo of San Felipe, Pueblo of Tesuque, and Ute Mountain Ute Tribe. Tribes requested that their concerns be acknowledged and considered during this planning process. Tribes also expressed concerns with the reduction of the Monument and the timeline for the planning effort. Tribes asked for continued consultation, including a visit to an All Pueblo Council of Governors meeting in Santa Fe, New Mexico. In response to their request, BLM State Director Roberson committed to attend and present the BENM planning effort to the council.

Table 4-3. American Indian Tribes Invited to Participate in Government-to-Government Consultation

All Pueblo Council of Governors*	Pueblo of Pojoaque
Colorado River Indian Tribes	Pueblo of San Felipe
Confederated Tribes of the Goshute Indian Reservation	Pueblo of San Ildefonso
Hopi Tribe	Pueblo of Sandia
Kaibab Band of Paiute Indians	Pueblo of Santa Ana
Navajo Nation	Pueblo of Santa Clara
Navajo Utah Commission*	Pueblo of Santo Domingo (Kewa)
Navajo Nation, Oljato Chapter	Pueblo of Taos
Navajo Nation, Red Mesa Chapter	Pueblo of Tesuque
Northwest Band of the Shoshone Nation	Pueblo of Ysleta del Sur
Paiute Indian Tribe of Utah	Pueblo of Zia
Pueblo of Acoma	Pueblo of Zuni
Pueblo of Cochiti	San Juan Southern Paiute Tribe
Pueblo of Isleta	Skull Valley Band of Goshute Indians
Pueblo of Jemez	Southern Ute Tribe
Pueblo of Laguna	Ute Indian Tribe of the Uintah and Ouray Reservation
Pueblo of Nambe	Ute Mountain Ute Tribe
Pueblo of Ohkay Owingeh	White Mesa Community of the Ute Mountain Ute Tribe
Pueblo of Picuris	

* Consultation letters are sent to the Navajo Utah Commission and the All Pueblo Council of Governors as a courtesy; this does not constitute government-to-government consultation.

The BLM and USFS drafted an American Indian Tribal Collaboration Framework (Appendix F) to provide structure and meaning to future collaboration and consultation with the Shash Jáa Commission and interested Tribes after the signing of RODs and the adoption of the MMPs. This collaboration framework was shared with the Shash Jáa Commission/Bears Ears Inter-Tribal Coalition and the interested Tribes as an attachment to a letter dated July 13, 2018. The July 13 letter included an invitation to the Shash Jáa Commission and invited interested Tribes to participate in a conference call held on July 25, 2018. Representatives from the Pueblos of Acoma and San Felipe, the Kaibab Band of Paiute Indians, the Paiute Indian Tribe of Utah, the USFS, and the BLM participated in the call. A follow-up email for this conference call was sent to the Shash Jáa Commission and interested Tribes on July 30, 2018, that included the American Indian Tribal Collaboration Framework. The email also included a reminder of meetings for government-to-government consultation and the Shash Jáa Commission that were on August 29 and 30, 2018.

In advance of the August 29, 2018, meeting for all Tribes, the BLM met with the Pueblo of San Felipe privately on August 29, 2018, to discuss cooperating agency status. At the all Tribes meeting later that day, the BLM met with representatives from the Ute Mountain Ute Tribe and the Bears Ears Inter-Tribal Coalition. The invitation for the meeting was included in letters sent on July 13, 2018, to the 31 Tribes for government-to-government consultation and to the Shash Jáa Commission/Bears Ears Inter-Tribal Coalition. In that letter, a meeting was offered to the Shash Jáa Commission/Bears Ears Inter-Tribal Coalition for August 30, 2018. However, the representatives for the Bears Ears Inter-Tribal Coalition verbally notified the BLM that they would not attend the meeting.

On August 17, 2018, the BLM notified the 31 Tribes of the availability of the Draft MMPs/EIS for comment. The letter included guidance for locating the Draft MMPs/EIS and other documents on the BLM's ePlanning website and how to comment on the Draft MMPs/EIS.

In the fall of 2018, the BLM held multiple consultation meetings with Tribes that expressed interest in the BENM and development of the MMPs. The BLM met with the Kaibab Band of Paiute Indians near Fredonia, Arizona, on September 20, 2018. The BLM met with representatives from the Pueblo of Acoma on October 9 and 10, 2018, to discuss the BENM planning effort and other topics in the MFO. The BLM met with the Ute Indian Tribe of the Uintah and Ouray Reservation and the Ute Mountain Ute Tribe in Montrose, Colorado, on October 11, 2018, with the intention of discussing the BENM, but the Tribes informed the BLM that they were advised not to discuss the BENM. On October 17, 18, and 19, the BLM, including State Director Roberson, went to New Mexico to present to the All Pueblo Council of Governors and consult with Tribal representatives at the Pueblo of Laguna, the Pueblo of Acoma, and the Pueblo of San Felipe.

In a letter dated December 14, 2018, the Tribes were invited to a government-to-government consultation meeting on January 9, 2019, and a consulting party meeting on January 10, 2019. These meetings were not held as scheduled as a result of the lapse in appropriations for the BLM. In a letter dated January 30, 2019, the Tribes were notified that the meetings were rescheduled, that a government-to-government consultation meeting would be held on February 27, 2019, and that a consulting party meeting would be held on February 28, 2019.

On February 27, 2019, 15 Tribal representatives from the Ute Mountain Ute, Navajo Nation-Navajo Utah Commission, Ute Indian Tribe of the Uintah and Ouray Reservation, Pueblo of Santa Clara, Pueblo of Laguna, Pueblo of San Felipe, Pueblo of Acoma, Southern Ute Tribe, and the Kaibab Band of Paiute Indians attended or participated via telephone in a consultation meeting to discuss the potential impacts to cultural resources resulting from management actions within the Monument.

On April 15, 2019, the BLM sent letters to American Indian Tribes and Navajo Nation chapter houses requesting face-to-face meetings in order to provide updates and continue Tribal consultation and coordination efforts for the planning effort. Follow-up emails reiterating this request were sent by the BLM on May 3, 2019. In response, Monticello Field Office Manager Gary Torres and BENM Native American Coordinator Cameron Cox traveled to New Mexico to meet with the Pueblos of San Felipe and Tesuque on May 22–23, 2019, and the Pueblos of Acoma and Laguna on June 20, 2019. As part of this effort, State

Director Ed Roberson and Canyon Country District Manager Lance Porter provided an informal briefing on the planning process to the Bears Ears Inter-Tribal Coalition in Durango, Colorado, on June 20, 2019.

Additional communication and government-to-government consultation between all interested Tribes, the BLM, and the USFS is ongoing. As part of the desire to build strong relationships with American Indian Tribes, the BLM and the USFS will continue to attend informal face-to-face meetings and participate in informal telephone conversations with various Tribal leaders and representatives to discuss the preparation and content of the MMPs. Additional formal government-to-government consultation and informal conversations are expected to continue among the interested Tribes, the BLM, and the USFS throughout the development and implementation of the MMPs.

4.5. Monument Advisory Committee

Presidential Proclamation 9558 provides that "The Secretaries, through the BLM and USFS, shall establish an advisory committee under the Federal Advisory Committee Act (5 U.S.C. App) to provide information and advice regarding the development of the management plan and, as appropriate, management of the monument." The Monument Advisory Committee's charter was signed on August 24, 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 in compliance with Proclamation 9558. A call for nominations was published in the *Federal Register* on August 30, 2018 The Secretary of the Interior appointed the Monument Advisory Committee's members on April 11, 2019, and a notice of public meeting for the Monument Advisory Committee was published in the *Federal Register* on May 3, 2019. The first Monument Advisory Committee meeting was held on June 5 and 6, 2019. During the meeting on June 5 and 6, 2019, the Monument Advisory Committee heard presentations about and discussed the MMPs, took public comment, and provided the BLM and the USFS input on issues related to the development of the MMPs and management of resources within the Monument. This input included recommendations addressing cultural resources, fire management, lands and realty, lands with wilderness characteristics, livestock grazing, target shooting, and recreation. The BLM and the USFS used and incorporated these recommendations in the development of Alternative E and the Proposed MMPs/Final EIS where appropriate.

4.6. Distribution of the MMPs/EIS

An administrative draft MMPs/EIS and administrative draft Proposed MMPs/Final EIS were prepared by the BLM and the USFS and distributed to the cooperating agencies for review. The BLM and USFS made changes to the Draft MMPs/EIS and Proposed MMPs/Final EIS in response to the comments received from the cooperating agencies during the review period. After the cooperating agencies' comments on the administrative Draft MMPs/EIS and Proposed MMPs/Final EIS were addressed, the BLM and the USFS provided notice regarding Draft MMPs/EIS publication and distributed the document to the agencies and organizations who expressed an interest in the planning process, including the cooperating agencies and American Indian Tribal governments listed in Tables 4-2 and 4-3. A notice that the document was available for review was also posted on the BLM's ePlanning website and in the *Federal Register.* A complete mailing and distribution list for the MMPs/EIS is available in the Administrative Record at the MFO.

4.7. List of Preparers

This MMP/EIS was prepared by an interdisciplinary team of staff from the BLM and USFS, with assistance from SWCA Environmental Consultants, Environmental Management and Planning Solutions, Inc. (EMPSi), and BBC Research. A list of the names and roles/responsibilities of the preparers is provided in Table 4-4.

Table 4-4. List of Preparers

Name	Agency	Role/Responsibility
Becky Doolittle	BLM	Project Manager
Lance Porter	BLM	District Manager
Jacob Palma	BLM	Monument Manager
Gary Torres	BLM	Field Office Manager
Tyler Ashcroft	BLM	State Office Planning Liaison
Ikumi Doucette	BLM	State Office Planning Liaison
Quincy Bahr	BLM	State Office Planning Liaison
Allison Ginn	BLM	National Conservation Lands
Erik Vernon	BLM	Air resources
Cameron Cox	BLM	Cultural resources and Tribal consultation
Nate Thomas	BLM	Cultural resources and Tribal consultation
M. Jared Lundell	BLM	Cultural resources
Josh Relph	BLM	Fire management
Bill Stevens	BLM	Lands with wilderness characteristics, social and economic conditions
Norbert Norton	BLM	Lands and realty
Jed Carling	BLM	Livestock grazing, riparian
Nephi Noyes	BLM	Livestock grazing
ReBecca Hunt-Foster	BLM	Paleontological resources
Ted McDougall	BLM	Mineral resources
Amber Johnson	BLM	Recreation, special designations, travel
Silas Sparks	BLM	Recreation, visual resource management
Cliff Giffen	BLM	Soil and water resources
Ann Marie Aubry	BLM	Water resources
Melissa Wardle	BLM	Special status species, wildlife and fisheries, woodlands
Gabe Bissonette	BLM	Fisheries
Nephi Noyes	BLM	Vegetation
Katie Steven	BLM	Visual resource management
Doug Wight	BLM	GIS
Tami Conner	USFS	Forest Planning Team Lead
Michael Diem	USFS	District Ranger
Ryan Nehl	USFS	Forest Supervisor
Tiffany Cummins	USFS	Assistant Planning Team Lead
Megan Eno	USFS	Partnership Coordinator
Chris Kramb	USFS	Assistant Planning Team Lead
Cathy Christensen	USFS	Engineering/facilities/roads and lands
Charmaine Thompson	USFS	Cultural and heritage resources
Don Irwin	USFS	Archaeology
Tina Marian	USFS	Livestock grazing and range
Kim Anderson	USFS	Vegetation/ecology/botany/invasive plants
Denise Laes	USFS	Hydrology, water resources
Daniel Lay	USFS	Vegetation resources, soils

Name	Agency	Role/Responsibility
Jeff Salow	USFS	Minerals/geology
Russ Bigelow	USFS	Fire/fuels
Brian Murdock	USFS	Recreation, travel management
Barb Smith	USFS	Wildlife
Jeff Jewkes	USFS	Wildlife and aquatics
Pat Murphy	USFS	Silviculture and timber
Scott Schwartz	USFS	Silviculture and timber
Deb Reber	SWCA	Project Manager
Reid Persing	SWCA	Project Manager
Matt Petersen	SWCA	Alternatives development, NEPA and planning, cumulative effects
Mark Spencer	SWCA	Fire and fuels management, paleontology
Janet Guinn	SWCA	Alternatives development, public involvement
Kelly Beck	SWCA	Cultural resources
Ryan Rausch	SWCA	Recreation
Joel Moore	SWCA	Riparian, wetland, and water resources, fisheries
Dave Epstein	SWCA	Soil resources
Joe Carlo	SWCA	Wildlife and fisheries, special status species
Audrey McCulley	SWCA	Vegetation
Merlyn Paulson	SWCA	Visual resources, night skies
Gretchen Semerad	SWCA	Woodlands and forestry
Kari Chalker	SWCA	Managing editor
Linda Burfitt	SWCA	Editing and document production
Diane Bush	SWCA	Editing
Debbi Smith	SWCA	Document production
Kris Stelter	SWCA	Document production
Rachel Johnson	SWCA	GIS
Laren Cyphers	SWCA	Response to comments on the Draft MMPs/EIS, Final EIS preparation
Jeremy Eyre	SWCA	Recreation, response to comments on the Draft MMPs/EIS, Final EIS preparation
Meggan Dugan	SWCA	Livestock grazing, wildlife, special status species, response to comments on the Draft MMPs/EIS
Lacey Wilder	SWCA	Response to comments on the Draft MMPs/EIS
Christina Skordas	SWCA	Response to comments on the Draft MMPs/EIS
Kaylee Lavery	SWCA	Administrative record, response to comments on the Draft MMPs/EIS
Amy Cordle	EMPSi	Air resources
Peter Gower	EMPSi	Lands and realty
Blake Busse	EMPSi	Transportation, noise, public health and safety
Sean Cottle	EMPSi	Lands with wilderness characteristics, special designations
Kate Krebs	EMPSi	Project coordination
Doug Jeavons	BBC Research	Socioeconomics