



**NATIONAL
CONSERVATION
LANDS**

Organ Mountains-Desert Peaks National Monument

Draft Resource Management Plan and Environmental Impact Statement

April 2024



Document No. BLM/NM/PL-24/001+1610

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

Our Mission

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

NATIONAL CONSERVATION LANDS

Mission

Conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations.

Cover Photo: Organ Mountains-Desert Peaks
National Monument (photo credit: Sherman
Hogue)



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Las Cruces District
Organ Mountains-Desert Peaks National Monument
1800 Marquess Street
Las Cruces, NM 88005-3371

April 5, 2024

In Reply Refer To:
BLM/NM/PL-24/001+1610

Dear Reader:

Enclosed is the Organ Mountains-Desert Peaks National Monument (OMDPNM) Draft Resource Management Plan (RMP) and associated Draft Environmental Impact Statement (EIS). The Bureau of Land Management (BLM), Las Cruces District Office prepared the Draft RMP/EIS in response to Presidential Proclamation 9131, which identified approximately 496,330 acres of federal lands and interest in lands owned or controlled by the government of the United States as the Organ Mountains-Desert Peak National Monument. The BLM developed the Draft RMP/EIS pursuant to the BLM's regulations for resource management planning found in 43 Code of Federal Regulations Subpart 1610, the National Environmental Policy Act of 1969, and other applicable laws.

The purpose of the Draft RMP/EIS is to provide a management framework, including goals, objectives, and management direction for BLM-administered lands associated with the Monument, including the 10 congressionally designated wilderness areas (Public Law 116-9) and the Kilborne Hole National Natural Landmark, consistent with the direction provided in Proclamation 9131. The approved RMP would supersede the applicable portions of the Mimbres RMP that was approved in December 1993.

The BLM encourages the public to provide information and comments pertaining to the analysis presented in the Draft RMP/EIS. We are interested in any new information that would help the BLM as it develops the Proposed RMP/Final EIS. As a member of the public, your timely comments on the Draft RMP/EIS will help formulate the Proposed RMP/Final EIS. The BLM will accept comments on the Draft RMP/EIS for ninety (90) calendar days following the Environmental Protection Agency's publication of a Notice of Availability of the Draft RMP/EIS in the *Federal Register*. The BLM must receive comments by July 5, 2024.

The BLM can best use your comments and resource information submissions if received within the review period.

Electronic comments may be submitted electronically via the ePlanning website: <https://eplanning.blm.gov/eplanning-ui/project/92170/510>. You also may hand deliver hard copy comments to the BLM Las Cruces District Office during business hours Monday-Friday (7:30 a.m. to 12:00 p.m. and 1:30 p.m. to 4:30 p.m.) or mail them to: ATTN: OMDPNM RMP Project Manager, BLM Las Cruces District, 1800 Marquess Street, Las Cruces, NM 88005. To facilitate analysis of comments and information submitted, we strongly encourage you to submit comments in an electronic format via the ePlanning website.

Your review and comments on the content of this document are critical to the success of this planning effort. If you wish to submit comments on the Draft RMP/EIS, we request that you make your comments

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as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, and reference to a section or page number. The BLM will consider and include comments containing only opinion or preferences as part of the decision-making process, although they will not receive a formal response from the BLM.

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

The BLM will hold a total of six public meetings. Five meetings will be conducted in-person, one each in Las Cruces, Anthony, Hatch, and Deming, New Mexico, and El Paso, Texas. One meeting will be conducted virtually. Details of all meetings will be announced once they are known. The dates and locations of Draft RMP/EIS public engagement meetings will be announced at least 15 days in advance.

The BLM will make available for public inspection a hard copy of the Draft RMP/EIS at the BLM Las Cruces District Office located at 1800 Marquess Street, Las Cruces, New Mexico 88005.

Sincerely,

A handwritten signature in blue ink that reads "Scott Cooke". The signature is written in a cursive style with a large initial "S".

Scott Cooke
District Manager

Organ Mountains-Desert Peaks National Monument Draft Resource Management Plan and Environmental Impact Statement (OMDPNM RMP/EIS)

1. Responsible Agency: United States Department of the Interior
Bureau of Land Management
2. Type of Action: Administrative (X) Legislative ()
3. Document Status: Draft (X) Final ()
4. Abstract: The Organ Mountains-Desert Peaks National Monument (OMDPNM) Draft Resource Management Plan (RMP) and associated Draft Environmental Impact Statement (EIS) describe and analyze alternatives for the planning and management of public lands and resources administered by the United States Department of the Interior, Bureau of Land Management (BLM), Las Cruces District Office. The planning area encompasses lands within the Monument's boundaries regardless of surface ownership or jurisdiction. Within the planning area, the BLM administers approximately 476,591 acres of surface land, referred to as the decision area. The decision area does not include state, municipal, or private land.

Presidential Proclamation 9131 (79 *Federal Register* 30431) identified approximately 496,330 acres of federal lands and interest in lands owned or controlled by the government of the United States as the Organ Mountains-Desert Peaks National Monument (Monument). The Monument is composed of BLM-administered lands encompassing five rugged mountain ranges surrounding the city of Las Cruces, New Mexico. Protection of the Monument was established to "preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the prehistoric, historic, and scientific values of this area remain for the benefit of all Americans."

The OMDPNM RMP must reflect the unique issues, management concerns, and resource conditions of the management area while reflecting the purposes set forth in Proclamation 9131. As part of the RMP development process, the BLM conducted scoping to solicit input from the public and interested agencies on the nature and extent of issues and impacts to be addressed in the Draft RMP/EIS. Planning issues identified for this RMP focus on protection of and management integration with natural and cultural resources; watershed management; travel and transportation management; opportunities for recreation, education, and interpretation; protection of unique characteristics of special designation areas; livestock management; and visual resources management.

Alternative A is the No Action Alternative that continues current management direction from the applicable portions of the 1993 Mimbres RMP. **Alternative B** emphasizes maintaining or enhancing habitat with the goal of achieving reference plant communities and supporting species augmentation and reintroduction efforts, while allowing for appropriate uses through allocations (such as recreation, OHV and mechanized use, and livestock grazing). **Alternative C** provides for more flexibility in the management of natural and cultural resources with resource uses, such as recreation, OHV and mechanized use, and livestock grazing. **Alternative D** emphasizes creation of opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing, while maintaining ecological function and meeting land capability to protect Monument resources, objects, and values.

Alternatives B, C, and D provide a range of management strategies for addressing issues identified through internal assessment and public scoping. Comments submitted by other government agencies, public organizations, state and tribal entities, and interested individuals were given careful consideration.

Review period: The review period on the OMDPNM Draft RMP/EIS is 90 calendar days. The review period began when the Environmental Protection Agency published a Notice of Availability in the *Federal Register*.

5. For further information, contact the following:

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ACRONYMS AND ABBREVIATIONS

Full Phrase

ACEC	area of critical environmental concern
AUM	animal unit month
BLM	United States Department of the Interior, Bureau of Land Management
CFR	Code of Federal Regulations
EIS	environmental impact statement
GHG	greenhouse gas
Monument	Organ Mountains-Desert Peaks National Monument
NEPA	National Environmental Policy Act of 1969
NHT	National Historic Trail
NNL	National Natural Landmark
OHV	off-highway vehicle
OMDPNM	Organ Mountains-Desert Peaks National Monument
RMP	resource management plan
RNA	research natural area
ROW	right-of-way
SRMA	special recreation management area
U.S.	United States

Executive Summary

ES.1 INTRODUCTION

The Organ Mountains-Desert Peaks National Monument (Monument) Draft Resource Management Plan (RMP) and Draft Environmental Impact Statement (EIS) describes and analyzes a range of alternatives for managing public lands within the Monument planning area. The planning area encompasses lands within the Monument's boundaries regardless of surface ownership or jurisdiction. Within the planning area, the United States (U.S.) Department of the Interior, Bureau of Land Management (BLM) administers approximately 476,591 acres of surface land, referred to as the decision area. The decision area does not include state, municipal, or private land.

On May 21, 2014, President Barack Obama signed Presidential Proclamation 9131 (79 Federal Register 30431), which identified approximately 496,330 acres of federal lands and interest in lands owned or controlled by the government of the United States as the Organ Mountains-Desert Peaks National Monument (BLM 2014). The Monument is composed of Bureau of Land Management (BLM)-administered lands encompassing five rugged mountain ranges surrounding the city of Las Cruces, New Mexico. Protection of the Monument was established to “preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the prehistoric, historic, and scientific values of this area remain for the benefit of all Americans.”

The Monument's current management is directed by the existing Mimbres RMP (BLM 1993), relevant amendments that apply to this planning area, and any interim Monument guidance. Although some decisions in the Mimbres RMP are still relevant, there are management issues, direction, and desired future conditions that need to be addressed, given the Presidential Proclamation. The Monument was established as a new planning area independent of other BLM-administered lands; to address these issues, the BLM has prepared a stand-alone document (OMDPNM RMP/EIS) pursuant to the BLM's regulation for resource management planning found in 43 CFR 1610 and the National Environmental Policy Act of 1969 (NEPA).

ES.2 PURPOSE OF AND NEED FOR ACTION

The purpose of developing the OMDPNM RMP/EIS is to respond to direction found in Presidential Proclamation 9131 (79 Federal Register 30431) and the John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 (Pub. L. 116-9; Dingell Act) directing the BLM to develop a land use management plan for 496,591 acres of BLM-administered lands in Doña Ana and Luna Counties, New Mexico. The OMDPNM RMP shall be constructed “to preserve the objects of scientific and historic interest on the Organ Mountains-Desert Peaks lands”¹ in accordance with Section 2 of the Antiquities Act of 1906 (Pub. L. 59-209) as a component of the National Landscape Conservation System (established by the Omnibus Public Land Management Act of 2009; Pub. L. 111-11); “to protect the wilderness character of the area”² in accordance with the Wilderness Act of 1964 (16 USC 1131 et. seq.) as a component of the National Wilderness Preservation System; and to establish land use allocations and resource management goals and

¹ Presidential Proclamation 9131 (79 Federal Register 30431)

² Public Law 116-9 – March 12, 2019; Subtitle C – Wilderness Designations and Withdrawals; Part I-General Provisions; 133 Stat. 647 (12)(A)

objectives for administration of Monument objects, lands, resources, and resource values according to established preservation and conservation principles.

The need to develop the OMDPNM RMP/EIS is derived from the following federal statutory, regulatory, and policy requirements:

- Section 202 of the Federal Land Policy and Management Act of 1976 (Pub. L. 94-579), as amended
- The National Environmental Policy Act of 1969 (Pub. L. 91-190), as amended
- Bureau of Land Management planning regulations (43 CFR Part 1600)
- BLM H-1601-I Land Use Planning Handbook
- BLM H-1790-I National Environmental Policy Act Handbook.

ES.3 ISSUES FOR ANALYSIS

Relevant issues discussed in the environmental consequences analyses in this EIS are as follows:

- How would the quality and quantity of SHSs for general wildlife species be affected by designated areas, recreation areas, motorized use, and right-of-way (ROW) allocations?
- How would disturbance, avoidance, disruption of movement patterns, injury, and mortality directly impact general wildlife species under each alternative?
- How would the quality and quantity of habitat for special status species be affected by special designations, recreation areas, motorized use, and ROW allocations within vegetation communities?
- How would disturbance, avoidance, disruption of movement patterns, injury, and mortality directly impact special status species?
- How would the potential for ground disturbance or the potential increase in vectors for invasive weed spread be affected under the range of alternatives?
- How would vegetation communities at low elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, recreation, grazing, and ROW allocations?
- How would vegetation communities at intermediate or high elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, recreation, grazing, and ROW allocations?
- How would the number of ignitions that require fire suppression affect fire resiliency and fire risks in the Monument?
- How would recreation uses and increased visitor use affect unique geological features?
- How would unique geological features be affected by road and trail maintenance?
- How would the loss or removal of scientifically important fossils—without formally studying them—and areas with more intensive visitor use impact sensitive paleontological resources?
- How would livestock grazing, rangeland improvements, and recreation impact soil stability and productivity?
- How would prescribed fires and vegetation treatments affect soil stability and productivity?
- How would cave ecosystems, cave resources, and cave-dependent species be affected by travel management, recreation, and development resulting from the proposed management changes?

- How would the probability for caves to be surveyed for potential listing as significant under the Federal Cave Resources Protection Act change under the range of alternatives?
- Would proposed management activities change the level of impacts on karst areas from development?
- How would management of livestock grazing under the alternatives impact water quality, streambanks, and floodplains?
- How would management of recreation, transportation, and access under the alternatives impact water quality, floodplains, and natural drainage patterns?
- How would special designations under the alternatives protect water resources from management activities?
- How would vegetation management, active fuels treatments, and reducing wildfire risk impact water quality, floodplains, and natural drainage patterns?
- How would the proposed management actions affect fine particulate matter 2.5 micrometers or smaller, large particulate matter less than 10 micrometers, and expected visibility?
- How would BLM management activities and allocations for allowable uses contribute to greenhouse gas emissions in the Monument?
- How would the integrity of known and unknown cultural resources be affected by ground disturbance and increased use and access?
- How would visual resource management class allocations affect visual values (including scenic quality) on BLM-administered lands?
- How would proposed management activities impact the number of allotments available for livestock grazing, the associated acres of BLM-administered lands, and the animal use months (AUMs) of forage allocated for livestock grazing?
- How would the quality, types, and levels of recreation opportunities be affected by changes in off-highway vehicle (OHV) allocations, special recreation management area (SRMA) designations, and recreational shooting areas?
- What would be the impact on ROWs, ROW exclusion and avoidance areas, and areas available for acquisition, retention, and disposal in the Monument?
- How would changes in OHV travel designations and routes outside of and inside special designations impact transportation use and access in the Monument?
- How would proposed management impact the relevant and important values identified for existing and proposed areas of critical environmental concern (ACECs)?
- How would proposed management impact the viewshed of the Butterfield Overland National Historic Trail (NHT)?
- How would proposed management impact the viewshed of the El Camino Real de Tierra Adentro NHT?
- How would proposed management impact the biological, scenic, geological, and research values of the Aden Lava Flow Research Natural Area (RNA)?
- How would proposed management impact the geological, scenic, and research values of the Kilbourne Hole National Natural Landmark (NNL)?

- How would changes in visual resources, changes in ground-disturbing activities, and increases in allowable activities or visitation impact areas and resources of Tribal importance, such as cultural and sacred sites, traditional cultural properties, and significant plant communities?
- How would the alternatives impact jobs and income in the socioeconomic study area?
- How would the alternatives impact social conditions for area residents and visitors?
- How would the alternatives impact the benefits to people provided from natural areas?
- Would proposed management result in environmental justice impacts (disproportionally high and adverse effects on minority, low-income, or Tribal populations or communities)?
- How would abandoned mining sites, increases or decreases in wildfire risk and recreational risk, and exposure to contaminants impact the safety of the Monument's users and local communities?

ES.4 ALTERNATIVES

ES.4.1 Alternative A

Alternative A meets the requirement that a No Action Alternative be considered. This alternative continues current management direction and prevailing conditions derived from existing planning decisions. Goals and objectives for resources and resource uses are based on the applicable portions of the 1993 Mimbres RMP (BLM 1993), along with associated amendments. The management laid out in Presidential Proclamation 9131 (3 CFR 9131 [2014]), which established the Monument, would supersede decisions from the Mimbres RMP. Laws, regulations, and BLM policies that supersede RMP decisions, such as the Dingell Act (Public Law No. 116-9), would also apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate allocations and restrictions pertaining to activities such as recreation, travel management, and livestock grazing would also remain the same. Three ACECs would continue to be managed to protect relevant and important values. Additionally, the BLM would continue to manage one NHT, one RNA, one>NNL, and ten designated wilderness areas. The BLM would also continue to manage two SRMAs.

The Monument would continue to be withdrawn from mineral entry, location, leasing, or sale and closed to casual collection of minerals, petrified wood, and common non-vertebrate fossils. The entire Monument would be managed as either ROW exclusion or avoidance. In areas not managed as exclusion, new ROW authorizations would be issued only "when they are necessary for the care and management of the Monument ROVs [resources, objects, and values] or are mandated by law" (Proclamation No. 9131, 3 CFR 9131 [2014]). Except in areas closed to OHV use, such use would continue to be limited to designated roads. Similarly, mechanized use would continue to be limited to designated roads and trails, except in closed areas.

ES.4.2 Alternative B

Alternative B emphasizes maintaining or enhancing habitat with the goal of achieving reference plant communities and supporting species augmentation and reintroduction efforts, while allowing for appropriate uses through allocations (such as recreation, OHV and mechanized use, and livestock grazing). Under Alternative B, the BLM would provide opportunities for recreation and travel with the most restrictions in terms of areas closed to OHV use. Some areas of the Monument would also be closed to recreational shooting. Portions of one allotment would be unavailable to grazing. This is because Alternative B is the most proactive in promoting conservation and recovery of threatened, endangered, and other special status species, as well as protecting other social and scientific values.

Alternative B would designate three new ACECs to be managed to protect scenic, cultural, and biological resource values. It would undesignate one ACEC and the RNA, which both fall entirely within designated wilderness areas.

ES.4.3 Alternative C

Alternative C is similar to Alternative B, but it provides for more flexibility in the management of natural and cultural resources with resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Under Alternative C, the BLM would provide opportunities for recreation and travel management with fewer restrictions than under Alternative B, but more than under Alternative A, in terms of areas closed to OHV travel and unavailable to grazing. The same areas of the Monument would be closed to recreational shooting under Alternative C and Alternative B, except that a smaller portion of the Doña Ana Mountains would be closed under Alternative C. Identical to Alternative B, Alternative C would undesignate one ACEC and the RNA, which both fall entirely within designated wilderness areas.

ES.4.4 Alternative D

Alternative D emphasizes creation of opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing, while maintaining ecological function and meeting land capability to protect Monument resources, objects, and values. Alternative D would have the fewest restrictions on recreation and travel management, although all areas not closed to OHV use would remain limited to designated roads per Proclamation 9131 (3 CFR 9131 [2014]). Of the three action alternatives, this alternative would provide the most opportunity for recreational shooting. Along with the RNA, all ACECs would be undesignated and would be instead managed in accordance with Proclamation 9131 (3 CFR 9131 [2014]) and applicable law and policy.

ES.5 SELECTION OF PREFERRED ALTERNATIVE

The Las Cruces District Manager recommends Alternative C as the preferred alternative. Alternative C balances protection of Monument resources, objects, and values identified in Proclamation 9131 with preservation of access to the Monument for recreation and other uses. It also provides flexibility for subsequent implementation actions. The preferred alternative (Alternative C) consists of components (objectives and management directions) of the other alternatives considered (Alternatives A, B, and D). During public review of this Draft RMP/EIS, the BLM is seeking constructive input regarding the proposals for managing resources and resource uses. After considering these comments, the BLM will develop a Proposed RMP to be evaluated in the Final EIS. The Proposed RMP can be any reasonable combination of objectives and management directions from the four alternatives (Alternatives A, B, C, and D) presented in this Draft RMP/EIS.

ES.6 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Fish, Wildlife, and Habitat

The action alternatives would prioritize the restoration and improvement of terrestrial and aquatic habitat, fish and wildlife populations, ecosystem health, ecological processes, and overall biodiversity. Nonnative and invasive species would be addressed through active management and mitigation. Alternative B emphasizes maintaining or enhancing habitat with the goal of achieving reference plant communities and supporting species augmentation and reintroduction efforts, while allowing for appropriate uses through allocations (such as recreation, vehicle use, and livestock grazing). These uses can impact wildlife through disturbance, avoidance, and competition and can impact habitat through degradation, vegetation

composition alteration, and influencing the establishment and spread of invasive and nonnative species. Alternative C would provide more flexibility for resource uses such as recreation and motorized vehicle use, which can impact fish, wildlife, and habitat. Alternative D would emphasize these uses, which would likely increase impacts on fish, wildlife, and habitat. Alternative B contains the largest number of acres that would exclude ROWs and be closed to surface disturbance from motorized vehicles; therefore, it would affect species and habitats less than other alternatives.

Special Status Species

The action alternatives would prioritize the protection and management of habitat for known populations of federal or state listed species and state species of greatest conservation need to prevent the need for listing of federal candidates, and to assist in recovery of listed species. As described in Section 2.5.1, Fish, Wildlife, and Habitat, Alternative B would likely have more limited impacts on special status species as compared to Alternatives A, C, and D due to the number of acres that would be closed to surface disturbance from motorized activities and ROW development.

Vegetation Communities

The risk of introducing and spreading invasive plant species over the life of the RMP and in the long term would be lowest under Alternatives B and C, and highest under Alternative D. Under all alternatives, the BLM would implement vegetation treatments that could transition vegetation communities toward a site's ecological capability or the potential natural community. This would result in long-term increases in the vegetation cover, production, species enrichment, and soil water-holding capability. All action alternatives would reduce the impacts on vegetation by including more management actions that address the potential impacts on vegetation and the proper care and management of relevant Monument objects and values. Management direction to address the structure, composition, and plant functional groups, as detailed in ecological site descriptions, would help move vegetation that is departed from the reference state toward desired conditions at a faster rate than Alternative A. Alternative D would have the greatest number of acres open to motorized travel and the fewest restrictions on recreation and travel management, which would result in the greatest potential for direct negative impacts on vegetation. Alternative B, followed by Alternative C, would offer the most protection for vegetation resources due to the acres that would be closed to surface disturbance from motorized activities and ROW development.

Wildland Fire Ecology and Management

The action alternatives would promote the ecological integrity of the native landscapes through proactive fire management. Under all alternatives, the treatments would occur in high-risk areas and areas with hazardous fuels build up thus reducing the possibility of large stand replacing fires and promoting fire resiliency

Geological Resources

Impacts on geological resources would be minimal because the decision area is closed to future mineral development, and motorized vehicle use in the Monument would be limited to designated routes or prohibited under all alternatives. Potential impacts on unique geological features from recreation uses and increased visitor use would be reduced under Alternatives B and C and increased under Alternative D, compared with Alternative A.

Paleontological Resources

Under all alternatives, continuing to adhere to the existing laws, such as the Paleontological Resources Preservation Act, and BLM paleontological resource policies (for example, BLM manuals and handbooks) would protect paleontological resources. Increasing recreation at the Monument, expected under all alternatives, would increase potential for discovery, study, and damage to paleontological resources. Management actions promoting continued research and preservation of paleontological resources, which are common to all action alternatives, would have beneficial effects on paleontological resources within the decision area.

Soil Resources

The potential impacts on soils and biological soil crusts from recreation use would be reduced under Alternatives B and C and increased under Alternative D when compared with Alternative A. The action alternatives would emphasize inventorying and monitoring of soil resources and protection of sensitive soils and provide more flexibility to adjust management when soils are adversely affected. Compared with Alternative A, this would reduce the erosion potential on susceptible soils and biological soil crusts from recreation uses, livestock grazing, vegetation treatments, and prescribed fire.

Cave and Karst Resources

Cave ecosystems, cave-dependent species, and cave resources, including cultural and paleontological resources, are primarily affected by Monument users entering and recreating within caves. Alternative B would provide the greatest reduction in impacts by directing the BLM to close caves with suitable bat habitat to all non-permitted use, except traditional Tribal use.

Karst areas are typically affected by the development of infrastructure occurring on the karst formations. No infrastructure development on known karst formations is proposed or anticipated to occur under any of the alternatives.

Water Resources

Under the alternatives, the BLM would emphasize management actions that protect natural watershed function and ecosystem characteristics. Under Alternative A, water resource management would continue to emphasize water rights and watershed management specifically related to water quality and sediment yields. Alternative B would administer the most protection for water resources by focusing on resource preservation and conservation; it would meet and move toward riparian and upland land health standards, protect and restore watershed functionality and resiliency, and include mitigation of nonpoint source pollution impacts on receiving streams outside the Monument, improvements to soil characteristics to increase infiltration, reduction of runoff, and promotion of desired vegetation communities. Alternative C would provide intermediate protection for water resources with less protection than Alternative B but more than Alternative A, to balance the protection of water resources with resource uses, such as recreation, vehicle use, and livestock grazing. Alternative D would prioritize resource uses while protecting water resources to maintain ecological function and to meet land capability.

All action alternatives include more management actions that address the potential impacts on water resources and the proper care and management of relevant Monument objects and values compared to Alternative A. Impacts on water resources due to livestock grazing, special designations, and vegetation treatments would not differ substantially across the action alternatives. With the fewest restrictions on travel and recreation and the fewest designated areas, Alternative D would provide the least protection

of water resources of all the action alternatives. With the most travel restrictions, Alternative B would provide the most protection of water resources.

Air Quality

The primary source of particulate matter emissions would be from recreation and travel management (99 percent). Impacts from particulate matter emissions are localized and occur along unpaved surfaces and roads. Particulate matter emissions are expected to be reduced locally in larger areas under Alternatives B and C with more travel management restrictions and additional requirements compared with Alternatives A and D. However, recreational uses, particularly those related to OHV travel, may be concentrated more within the open areas in the planning area, increasing localized impacts on air quality in those areas.

Climate and Greenhouse Gases

Under all alternatives, recreation is expected to continue to grow, resulting in increased travel to the planning area and increased greenhouse gas emissions from such activities. While it is possible that more restrictive travel management under Alternatives B and C would result in lower overall activity within the Monument, resulting in reduced vehicular greenhouse gas emissions, restrictions have the potential to result in increased activities in other locations within the planning area, with total impacts remaining the same. Under all alternatives, livestock grazing would be the dominant source of greenhouse gas emissions in the Monument due to the higher global warming potential of methane. Implementation of prescribed fires under the action alternatives would reduce the potential for occurrences of severe uncontrolled wildfires. Therefore, while greenhouse gas emissions from prescribed fires would increase, the greenhouse gas emissions from wildland fires over the long term may be less, compared with Alternative A.

Cultural Resources

The Monument includes a full range of cultural resources, but only a very small portion has been formally surveyed. Management as a Monument and existence of extensive areas managed as wilderness would preclude many activities that could otherwise impact cultural resources. Reducing or avoiding the potential for impacts on cultural resources under all alternatives depends largely on adhering to existing regulatory procedures for the consideration of effects on cultural resources. For example, Section 106 of the National Historic Preservation Act or the BLM and New Mexico State Historic Preservation Office Protocol Agreement and other agreements or protocols would be followed, as appropriate.

Increasing recreation demand at the Monument is expected under all alternatives, and increased recreational access is expected under all action alternatives. This would increase potential for inadvertent incremental damage, casual collection of artifacts, or vandalism of cultural resources. Compared to Alternative A, under Alternatives B and C there are greater restrictions on motorized travel that would result in reduced potential for impacts on cultural resources' integrity from increased use or access. These travel related restrictions are greatest under Alternative B, while there are fewer restrictions under Alternative D compared to those under Alternative A.

Visual Resources

Under Alternative A, the BLM would continue to manage 89,861 acres in a manner that could allow activities that have an increased potential to change the visual quality in areas with high value (VRI Class II). There are no areas where the visual quality would be potentially allowed to degrade under Alternatives B, C, and D.

Livestock Grazing

Presidential Proclamation 9131 provides the following regarding grazing on Organ Mountain-Desert Peaks National Monument lands:

Laws, regulations, and policies followed by the BLM in issuing and administering grazing permits and leases on lands under its jurisdiction shall continue to apply with regard to the lands in the Monument, consistent with the protection of the objects identified above.

To determine livestock grazing compatibility and the impacts grazing could exact on objects of scientific and historic interest protected in the Monument, with attention given to the enhanced land use conservation and preservation principles employed to develop land use plan allocations and resource management goals and objectives, the BLM Las Cruces District Office will perform thorough land health evaluations and grazing compatibility assessment(s) to develop appropriate grazing management guidance and decisions consistent with Presidential Proclamation 9131's direction to "preserve the objects of scientific and historic interest on the Organ Mountains-Desert Peaks lands."

The surveys and evaluations will be completed to establish the status of ecosystem structures, functions, or processes within a specified geographic area, to include watershed health analysis. Surveys and assessments will be performed by collecting, synthesizing, and interpreting land and watershed health status from observations, inventories, and long-term monitoring programs including the Assessment, Inventory, and Monitoring (AIM) strategy. The three standards of rangeland health identified in the January 12, 2001 Record of Decision *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management*³, hereby incorporated by reference, are: 1) the Upland Sites standard; (2) the Biotic Communities, including Native, Threatened, Endangered and Special Status Species standard; and (3) the Riparian Sites standard. The goal of these standards is to ensure in the short term and long term there will be beneficial impacts to water quality, riparian and terrestrial wildlife habitat, wildlife, riparian area functions, ecological processes, rangeland productivity and plant cover and diversity. In the long term, healthy public lands will be sustained both in amount and quality. Upon completion of these surveys and evaluations, the BLM will implement informed grazing management actions and decision making "consistent with the protection of objects of scientific and historic interest."

How Will the Data be Used?

The livestock grazing compatibility surveys and evaluations will help the BLM: 1) ensure that significant progress is made toward achieving the standards for public land health, 2) evaluate grazing allotments for permit renewal, and 3) determine what level of livestock grazing is compatible with protection of the objects of scientific and historic interest identified in Presidential Proclamation 9131. Land Health Evaluations would be completed on grazing allotments prior to permit renewal and would include allotment field visits and a thorough evaluation of available data as described in the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* and regulatory guidance at 43 CFR Subpart 4180 et seq (*Fundamentals of Rangeland Health Standards and Guidelines for Grazing Administration*). The Monument Manager/Authorized Officer shall establish livestock grazing management practices

³ [Standards for Public Land Health and Guidelines for Livestock Grazing in New Mexico \(blm.gov\)](https://www.blm.gov/1016/REG-2001-001)

informed by the livestock grazing compatibility surveys and evaluations in conjunction with Presidential Proclamation 9131 and other appropriate Federal laws, regulations, and agency policy.

Recreation

Under all alternatives, recreational use in the Monument would be managed under various SRMA designations. Alternatives B and C would increase the amount of primitive and quiet recreation opportunities, such as pedestrian uses, wildlife viewing, and equestrian use; however, motorized recreation opportunities would decrease due to additional closures to motorized travel (54 percent of the Monument under Alternative B and 52 percent under Alternative C, compared with 49 percent under Alternative A). Alternative D, which would close 48 percent of the Monument to motorized travel, would increase motorized recreation opportunities compared with Alternative A.

Restricting camping to 2 days at the Sierra Vista and Baylor Canyon trailheads under Alternative D would result in shorter stays at the Monument and allow more people to camp at these popular locations due to increased turnover. Prohibiting camping at the trailheads under Alternative B would result in increased demand to camp in other locations in or adjacent to the Monument. Under Alternative C, designation of areas open to overnight camping during implementation-level planning would allow for further site-specific examination of recreational needs to meet the demands for camping opportunities while maintaining public safety.

While the action alternatives would reduce opportunities for recreational shooting compared with Alternative A, they would improve public safety and reduce user conflicts in these popular recreation areas within the Monument. Visitors would have the opportunity to engage in recreational shooting on approximately 94 to 95 percent of the Monument under the action alternatives and 99 percent under Alternative A.

Access to the Organ Mountains Wilderness would improve under all action alternatives if the BLM acquired legal public access to Achenbach Canyon. Compared with Alternative A, access for recreationists would be improved, and conflicts with private landowners would be reduced, under the action alternatives if the BLM acquired legal public access to the Sierra de Las Uvas Wilderness Area and the Picacho Peak area. Recreation in all these areas would increase due to these access improvements.

Subsequent implementation-level recreation planning would further enhance user experiences and reduce conflicts under all alternatives.

Lands and Realty

Under all alternatives, the BLM would continue to exclude new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objectives, and values, or are mandated by law, per the Proclamation. Thus, the number of ROWs would remain static or increase only minimally. The minimal variation in acreage for ROW exclusion areas across all alternatives would have little effect on the BLM's ability to grant ROWs on BLM-administered lands. Since there would be minimal changes in existing conditions, all alternatives would have no adverse effects on land use authorizations and tenure.

Transportation and Access

Alternatives B and C would increase the acreage designated as closed for public motorized OHV access and decrease the acreage designated as limited to designated roads for public motorized OHV access when compared with Alternative A. This would reduce overall transportation access and entry to areas in the Monument more than under Alternative A. Alternative D would decrease the acreage designated as closed for public motorized OHV access and increase the total acreage designated as limited to motorized roads for public motorized OHV access when compared with Alternative A. This would increase access in certain areas of the Monument more than under Alternative A. No areas would be designated as open for cross-country public motorized OHV access under Alternative A or the action alternatives.

Special Designations

Under all alternatives, the Butterfield Overland NHT, the Kilbourne Hole NNL, and designated wilderness areas would remain the same. Impacts on certain resources in Kilbourne Hole NNL would change by alternative due to differing restrictions on OHV use and recreation. Impacts on the relevant and important values of existing and proposed ACECs would not vary substantially between alternatives that designate or undesignate them due to other protections from Proclamation 9131 and management of designated wilderness areas overlapping these areas. Under all action alternatives, the Robledo Mountains ACEC would be undesignated, situated within designated wilderness, ensuring continued protection of scenic, biological, paleontological, and cultural resources under Proclamation 9131 and required wilderness management. Alternative B would designate three new ACECs, with minimal impact differences compared with Alternative A. Alternative C impacts on proposed ACECs would be similar to Alternative A, safeguarding Doña Ana Mountains and Organ/Franklin Mountains ACECs despite a size reduction. Alternative D, with similar impacts on proposed ACECs, may pose increased biological impacts in the Organ/Franklin Mountains ACEC due to fewer restrictions. The Doña Ana Mountains ACEC under Alternative D faces potential increased impacts to cacti diversity due to undesignation and the retention of a road used for illegal plant collecting. Despite these nuances, relevant and important values, including scenic, biological, and cultural aspects, remain protected through Proclamation 9131 management. Impacts on the resources in the Aden Lava Flow RNA would be the same under all alternatives, regardless of whether the RNA is designated or undesignated. This is because the RNA is entirely within designated wilderness.

Tribal Interests

Contemporary Tribes maintain connections to locations and resources within the Monument for traditional and spiritual uses. Reducing the potential for impacts on Tribal interests under any of the alternatives hinges upon continuing to honor the obligation to consult meaningfully with federally recognized Tribes during the planning process and for all undertakings that have the potential to impact Tribal interests. Based on the restrictions and resource protections under the alternatives, Alternative B would likely contribute the least to impacts on resources of importance to Tribes by ground-disturbing activities, increasing visitation, and broad changes to visual resources. Alternative C would likely be the next least impactful, followed by Alternative A, and then Alternative D, in that order.

Environmental Justice

Under all alternatives, there is no indication that any of the BLM actions proposed in any of the alternatives would cause disproportionate effects on minority and low-income populations in the planning area. All

alternatives would work within the framework of the Monument's Proclamation. Monument designations have been shown to contribute to the regional economy and boost job creation, and the Monument is an economic driver for the study area, especially Doña Ana County. Positive economic contributions would occur under all alternatives and would represent a benefit for all communities, including environmental justice communities.

Social and Economic Conditions

Proposed management under all Alternatives would support continued economic contributions from grazing and recreation. No quantitative change to the level of recreation use or the quantity of local/nonlocal or day/overnight visitation can be estimated by alternative. As a result, economic contributions are the same across alternatives for recreation. Additionally, because AUMs do not vary across alternatives, livestock grazing economic contributions do not vary across alternatives. Based on current levels of use, a total of 392 jobs and \$12.3 million in labor income are supported by recreation and livestock grazing in the regional economy.

Recreation stakeholders who value more quiet recreation experiences would be most supported under Alternative B, followed by Alternative C. Alternative D would allow for more areas open to OHV use, and as such, would provide more support for those who value motorized recreation experiences. While a quantitative change in consumer surplus cannot be estimated by alternative, changes to OHV use could translate to increased visitation for OHV recreation under Alternative D, resulting in the potential for an increase in the value for motorized developed uses. Compared with Alternative A, Alternative B would result in potential increased visitor days and increased consumer surplus value for those pursuing more passive recreation, such as photography, wildlife viewing, picnicking, hiking, walking, running, and bicycling.

Compared with Alternative A, Alternatives B and C would impact the recreation experience and associated nonmarket value for those pursuing camping opportunities. Overnight camping at Sierra Vista and Baylor Trailheads would be prohibited under Alternative B, due to health and safety concerns, and would be limited to 2 days under Alternative C. Alternative B would remove opportunities for camping and thereby impact camping experiences, compared with Alternative A.

Compared with Alternative A, all action alternatives would provide for an enhanced recreation experience through construction of an interpretative center because the center would support opportunities to learn about the Monument.

Across alternatives, managing and maintaining the open spaces associated with wilderness, the NNL, and the NHT would continue to support values associated with natural amenities and open space, including specially designated lands. Because acres of protected areas would remain the same across all alternatives, management would provide continued open spaces that benefit adjacent property values.

Designated areas such as ACECs, SRMAs, wilderness areas, or other management that restricts certain activities, such as recreational use and ROW developments would also provide continued support for associated ecosystem services, such as biodiversity and habitat.

Public Safety

Management under the action alternatives would improve public safety by reducing user conflicts, particularly related to camping and recreational shooting near popular recreation areas, and by better addressing anticipated future risks from wildfire and increased visitation. Overall, impacts would be similar under all action alternatives except that Alternative B would provide the greatest reduction in potential conflicts between recreational shooting activities and other recreational uses.

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APPENDICES

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ACRONYMS AND ABBREVIATIONS

Full Phrase

ACEC	area of critical environmental concern
ADC	Animal damage control
AIM	assessment, inventory, and monitoring
AMP	allotment management plan
AMS	analysis of the management situation
AUM	animal unit month
ATV	all-terrain vehicle
BLM	Bureau of Land Management
BLM/NMSHPO PA	BLM and New Mexico State Historic Preservation Office Protocol Agreement
BLS	Bureau of Labor Statistics
CEQ	Council on Environmental Qualifications
CFR	Code of Federal Regulations
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
DOD	Department of Defense
DOI	US Department of the Interior
Dingell Act	John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019
EIS	environmental impact statement
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
FRCC	fire regime condition class
GIS	geographic information systems
HMP	habitat management plan
HUC	hydrologic unit code
ID	interdisciplinary
IIRH	Indicators of Rangeland Health
IPCC	Intergovernmental Panel on Climate Change
IPCC AR6	Intergovernmental Panel on Climate Change Sixth Assessment Report
LCDO	Las Cruces District Office
MMT	million metric tons
Monument	Organ Mountains-Desert Peaks National Monument
MOU	Memorandum of Understanding
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessments

NEPA	National Environmental Policy Act
NHT	National Historic Trail
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMMNHS	New Mexico Museum of Natural History and Science
NNL	National Natural Landmark
NPS	National Park Service
NRT	National Recreation Trail
NRCS	Natural Resources Conservation Service
OHV	off-highway vehicle
OMDPNM	Organ Mountains-Desert Peaks National Monument
PFYC	Potential Fossil Yield Classification
PILT	Payments in Lieu of Taxes
PM _{2.5}	fine particulate matter 2.5 micrometers or smaller
PM ₁₀	large particulate matter less than 10 micrometers
Piro-Manso-Tiwa Tribe	Piro-Manso-Tiwa Indian Tribe of the Pueblo of San Juan de Guadalupe
R&PP	Recreation and Public Purposes
RMP	resource management plan
RMZ	recreation management zone
RNA	Research Natural Area
ROV	Resources, Objects, and Values
ROW	right-of-way
SEZ	solar energy zone
SHPO	State Historic Preservation Office
SHS	standard habitat site
SMA	special management area
SRMA	special recreation management area
SRP	special recreation permit
Tortugas Pueblo	La Corporacion de Los Indigenes de Nuestra Senora de Guadalupe
UAV	unmanned aerial vehicle
US	United States
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USC	United States Code
USNVC	United States National Vegetation Classification Standard
UTV	utility-terrain vehicle
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WUI	wildland-urban interface

Chapter I. Introduction and Purpose and Need

I.1 INTRODUCTION

In southern New Mexico, surrounding the City of Las Cruces in the Rio Grande's fertile Mesilla Valley, five iconic mountain ranges rise above the Chihuahuan Desert grasslands: the Robledo, Sierra de las Uvas, Doña Ana, Organ, and Potrillo Mountains. These mountain ranges and the lowlands form the Organ Mountains-Desert Peaks area.

On May 21, 2014, President Barack Obama signed Presidential Proclamation 9131¹ (79 *Federal Register* 30431), which identified approximately 496,330 acres of federal lands and interest in lands owned or controlled by the government of the United States as the Organ Mountains-Desert Peaks National Monument (Monument) (BLM 2014). The Monument is composed of Bureau of Land Management (BLM)-administered lands encompassing five rugged mountain ranges surrounding the city of Las Cruces, New Mexico. Protection of the Monument was established to “preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the prehistoric, historic, and scientific values of this area remain for the benefit of all Americans.”

Presidential Proclamation 9131 states the Monument shall be managed by the BLM as a unit of the National Landscape Conservation System, pursuant to applicable legal authorities, including, as applicable, provisions set forth in the Federal Land Policy and Management Act of 1976 (FLPMA), as amended (Public Law 94-579). The BLM Las Cruces District Office (LCDO) is developing a resource management plan (RMP) to establish land use management allocations, goals, objectives, and direction for BLM-administered lands associated with the Monument, including the 10 congressionally designated wilderness areas (Public Law 116-9) and the Kilbourne Hole National Natural Landmark (NNL); these are hereafter known as the “decision area,” as required by Sections 201 and 202 of FLPMA and the regulations in 43 Code of Federal Regulations (CFR) 1600. BLM RMPs/land use plans are the basis for all on-the-ground actions the BLM undertakes.

In conjunction with the RMP, the BLM is preparing an environmental impact statement (EIS) to identify, analyze, and publicly disclose impacts on the natural and human environment arising from land use management goals, objectives, and direction identified in the range of alternatives developed to manage the decision area. A Record of Decision will be issued upon RMP approval, consistent with statutory and regulatory mandates from the National Environmental Policy Act of 1969 (NEPA); appropriate Council on Environmental Quality (CEQ) guidance; BLM Manual 6220 – National Monuments, National Conservation Areas, and Similar Designations (2017); the Wilderness Act of 1964 (16 USC 1131 et. seq.), as amended²; and other applicable laws, regulations, or policy.

The BLM is using an ongoing landscape-level adaptive management planning process to ensure the RMP, future implementation-level plans, and land use management decisions remain consistent with appropriate

¹ <https://www.federalregister.gov/documents/2014/05/28/2014-12508/establishment-of-the-organ-mountains-desert-peaks-national-monument>.

² https://www.nps.gov/subjects/wilderness/upload/WV-Act_508.pdf

laws, regulations, proclamations, orders, and policies. This process involves public participation, assessment, decision-making, implementation, plan monitoring, and evaluation, as well as adjustments, as required, through maintenance, amendment, and revision. This process allows for continuous adjustments to respond to new issues and changed circumstances. The BLM will make decisions using the best information available.

The Monument's current management is directed by the existing Mimbres RMP (BLM 1993), relevant amendments that apply to this planning area, and any interim Monument guidance. Although some decisions in the Mimbres RMP are still relevant, there are management issues, direction, and desired future conditions that need to be addressed, given the Presidential Proclamation. The Monument was established as a new planning area independent of other BLM-administered lands; to address these issues, the BLM has prepared a stand-alone document (OMDPNM RMP/EIS) pursuant to the BLM's regulations for resource management planning found in 43 CFR 1610 and NEPA.

I.2 PURPOSE OF AND NEED FOR THE PLAN

The purpose of developing the OMDPNM RMP/EIS is to respond to direction found in Presidential Proclamation 9131 (*79 Federal Register* 30431) and the John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 (Pub. L. 116-9; Dingell Act)³ directing the BLM to develop a land use management plan for 496,591 acres of BLM-administered lands in Doña Ana and Luna Counties, New Mexico. The OMDPNM RMP shall be constructed "to preserve the objects of scientific and historic interest on the Organ Mountains-Desert Peaks lands"⁴ in accordance with Section 2 of the Antiquities Act of 1906 (Pub. L. 59-209)⁵ as a component of the National Landscape Conservation System (established by the Omnibus Public Land Management Act of 2009; Pub. L. 111-111); "to protect the wilderness character of the area"⁶ in accordance with the Wilderness Act of 1964 (16 USC 1131 et. seq.) as a component of the National Wilderness Preservation System; and to establish land use allocations and resource management goals and objectives for administration of Monument objects, lands, resources, and resource values according to established preservation and conservation principles.

The need to develop the OMDPNM RMP/EIS is derived from the following federal statutory, regulatory, and policy requirements:

- Section 202 of the Federal Land Policy and Management Act of 1976 (Pub. L. 94-579), as amended
- The National Environmental Policy Act of 1969 (Pub. L. 91-190), as amended
- Bureau of Land Management planning regulations (43 CFR Part 1600)

³ See Sections 1201 (Organ Mountains-Desert Peaks Conservation), 4102 (Federal Land Open to Hunting, Fishing, and Recreational Shooting), and 4103 (Closure of Federal land to Hunting, Fishing, and Recreational Shooting) of the Act here: <https://www.congress.gov/116/plaws/publ9/PLAW-116publ9.pdf>. The BLM also issued Instruction Memorandum 2021-010, Implementation of the John D. Dingell, Jr. Conservation, Management, and Recreation Act, on December 30, 2020. <https://www.blm.gov/policy/im2021-010>. See also House Report No. 101-405 (February 21, 1990), <https://winapps.umn.edu/winapps/media2/wilderness/toolboxes/documents/grazing/House%20Report%20101-405A.pdf>.

⁴ Presidential Proclamation 9131 (*79 Federal Register* 30431)

⁵ <https://www.nps.gov/rabr/learn/management/upload/antiquities-act.pdf>.

⁶ Public Law 116-9 – March 12, 2019; Subtitle C – Wilderness Designations and Withdrawals; Part I-General Provisions; 133 Stat. 647 (12)(A)

- BLM H-1601-I Land Use Planning Handbook
- BLM H-1790-I National Environmental Policy Act Handbook

I.3 DESCRIPTION OF THE PLANNING AREA, DECISION AREA, AND ANALYSIS AREA

The BLM’s Land Use Planning Handbook (H-1601-I) differentiates between geographic areas associated with planning. These areas include the planning area, decision area, and analysis area. The planning area is the geographic area within which the BLM will propose management decisions during a planning effort. The planning area encompasses lands within the Monument’s boundaries regardless of surface ownership or jurisdiction (**Table I-1**).

Table I-1
Surface Ownership in the Planning Area

Land Management Agency or Owner	Acres	Percentage of the Planning Area
BLM ¹	496,591	86.6
State of New Mexico	67,096	11.7
Private	9,926	1.7
Total	573,613	100

Source: BLM GIS 2022

¹This acreage makes up the decision area.

The decision area, which is 496,591 acres, includes all BLM-administered land in the planning area for which the BLM has the authority to make land use decisions (**Table I-1**). Generally, the BLM has jurisdiction over all BLM-administered lands (surface and subsurface) and over subsurface minerals in areas of split-estate (the surface is owned by a nonfederal entity, such as a state or a private owner). The decision area makes up 86.6 percent of the Monument planning area. The BLM is not making any decisions regarding subsurface minerals in this RMP because the Monument is withdrawn from mineral entry.

The analysis area includes any lands, regardless of jurisdiction, for which the BLM synthesizes, analyzes, and interprets information that relates to planning for BLM-administered land. For the OMDPNM RMP/EIS, this includes all lands within Doña Ana and Luna Counties regardless of jurisdiction or ownership. The analysis area can be any size, vary according to resource, and be located anywhere within, around, partially outside, or completely outside the planning or decision areas. The cumulative effects analysis areas in the OMDPNM RMP/EIS may expand beyond these general planning boundaries, depending on the resource or resource use.

The Monument (the planning area) covers 573,613 acres in south-central New Mexico, primarily within Doña Ana County and a small portion extending into Luna County (**Figure I-1**, Organ Mountains-Desert Peaks National Monument Planning Area, and **Figure I-2**, Organ Mountains-Desert Peaks National Monument Surface Decision Area). Presidential Proclamation 9131 states the acreage of the Monument as 496,330 acres. However, the acreage calculated using the BLM’s geographic information system (GIS) layer for the Monument⁷ shows a larger area of 496,591 acres. Since the acreage provided for the Proclamation was not derived from a GIS exercise, the BLM has elected to use the GIS figures for the RMP/EIS development.

⁷ GIS data were calculated using North American Datum 1983 UTM 13N.

The Monument consists of five mountain ranges—the Organ, Doña Ana, Sierra de las Uvas, Robledo, and Potrillo Mountains—plus the northern portion of the Franklin Mountains. These mountain ranges make up four Monument units, which are administered as a unit of the BLM’s National Conservation Lands system.

The Organ Mountains unit is about 10 miles east of the city of Las Cruces in Doña Ana County, and it borders the west side of the White Sands Missile Range and Fort Bliss. The geologic features of the range, spires, crevices, and canyons are visually stunning and can be visible more than 100 miles away. The highest point is Organ Needle at 8,990 feet above mean sea level.

Northwest of the Organ Mountains and about 5 miles north of Las Cruces is the Doña Ana Mountains unit, which shares the southern border of the Jornada Experimental Range. The Doña Ana Mountains reach an elevation of 5,800 feet above mean sea level and were designated as an area of critical environmental concern (ACEC) to protect the scenic, botanical, and wildlife values.

The Robledo and Sierra de las Uvas Mountains unit lies northwest of Las Cruces. This unit, also known as the Desert Peaks, consists of the Sierra de las Uvas Mountains on the northwestern end and the Robledo Mountains on the southeastern end. The unit is delineated by Highway 26 on the north and west sides, Interstate 10 on the south side, and the Rio Grande on the east side. Cultural resources include evidence of World War II bombing targets, petroglyphs, and pit houses. The Robledo Mountains are also home to the BLM-administered Prehistoric Trackways National Monument.

The Potrillo Mountains unit is approximately 30 miles southwest of Las Cruces. The mountains exhibit prime examples of Chihuahuan Desert vegetation as well as a remarkable volcanic field made up of cinder cones, maar craters,⁸ lava flows, and the inactive shield volcano of Aden Crater. Its oldest maar crater is thought to be the mile-wide Kilbourne Hole, at more than 80,000 years old.

Doña Ana County is the most populated county in the analysis area. According to the US Census Bureau, the 2020 population of Doña Ana County was 219,561 people, a 4.3 percent population increase since 2010 (US Census Bureau 2020a). Las Cruces is the largest metropolitan area in the analysis area, with a 2020 population of 111,385 people, or approximately 51 percent of the Doña Ana County population (US Census Bureau 2020b). Approximately 68 percent of people in Doña Ana County identify their ethnicity as Hispanic or Latino, and nearly 32 percent identify themselves as White and not Hispanic (US Census Bureau 2020c).

Luna County is designated as a central micropolitan statistical area. Luna County’s 2020 population was 25,427 people, a 5.5 percent population decrease since 2010 (US Census Bureau 2020d). Deming is the largest city in the analysis area, with a 2020 population of 14,758 people, or approximately 58 percent of Luna County’s population (US Census Bureau 2020d). Approximately 67 percent of people in Luna County identify their ethnicity as Hispanic or Latino, whereas 33 percent identify themselves as White and not Hispanic (US Census Bureau 2020e).

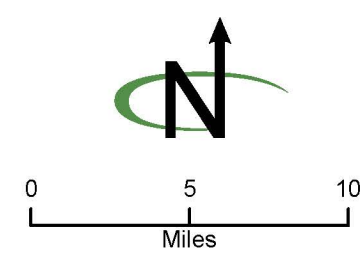
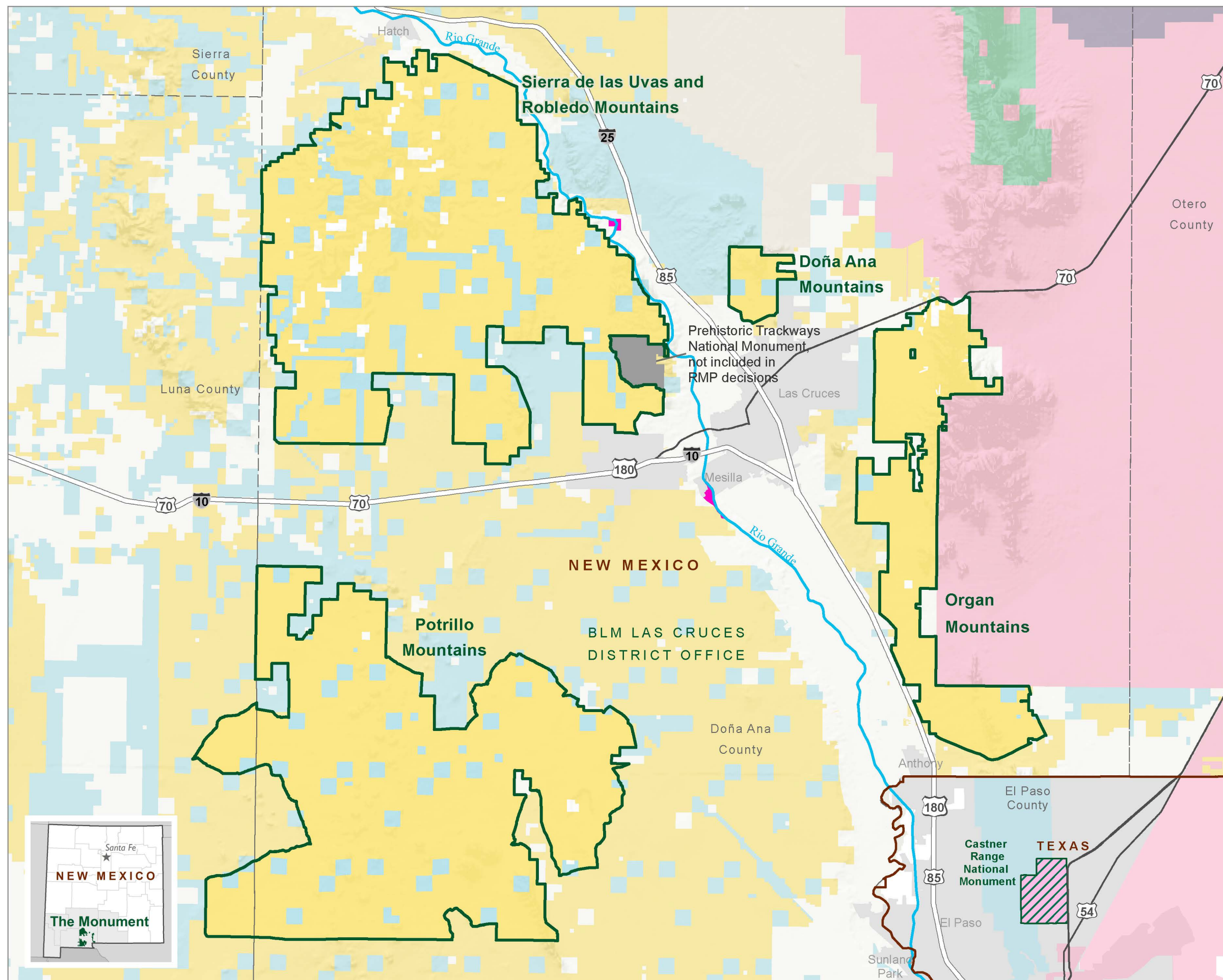
⁸ A maar is a low-relief, broad volcanic crater formed by shallow explosive eruptions.



**Figure 1-1
Organ Mountains-Desert Peaks
National Monument Planning Area**

Surface Ownership

- Bureau of Land Management
- Department of Defense
- Castner Range National Monument
- Private
- Private, incorporated place
- State
- Bureau of Reclamation
- The Jornada Experimental Range
- San Andres National Wildlife Refuge
- White Sands National Park
- State Park
- Organ Mountains-Desert Peaks National Monument



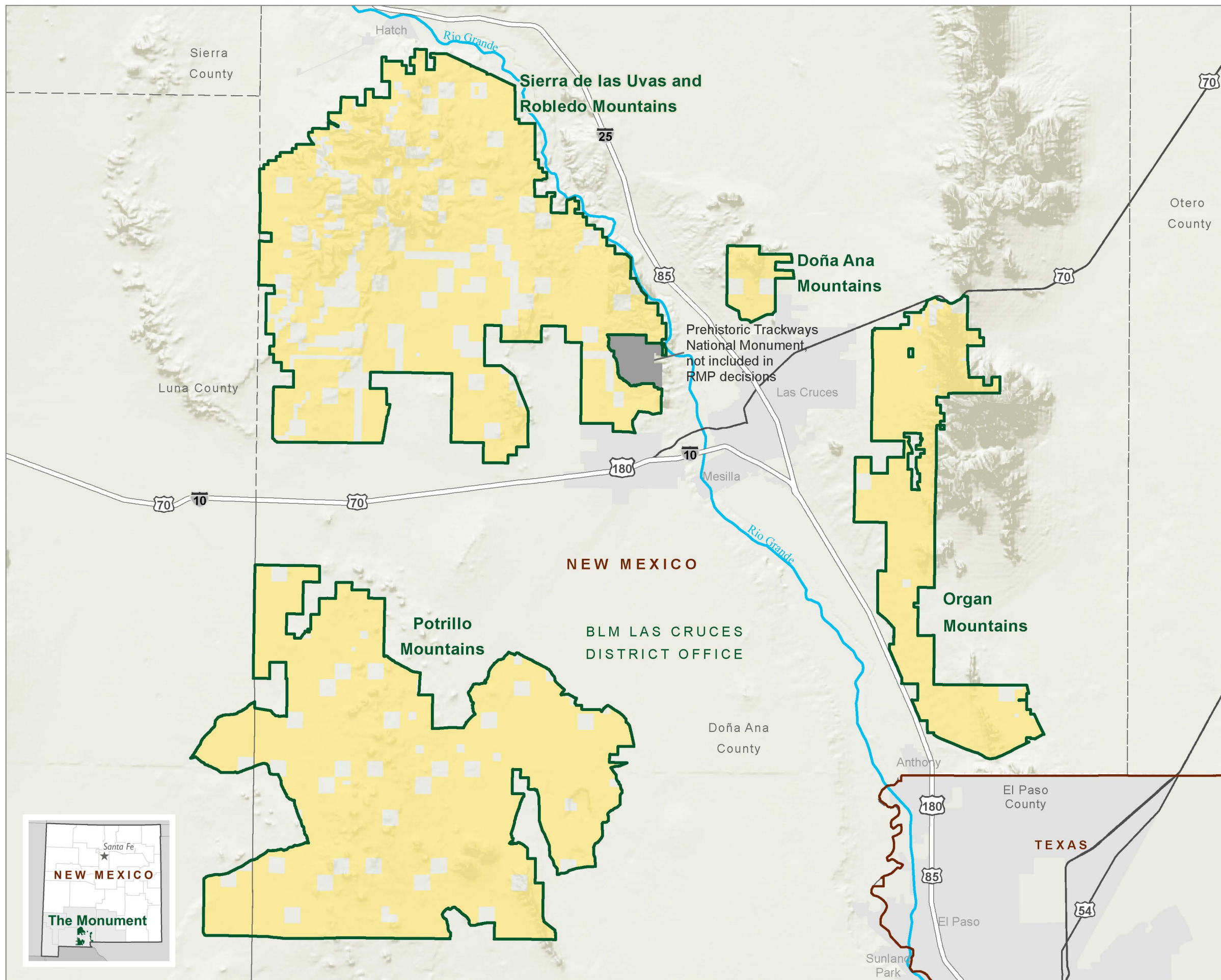
Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 July 03, 2023, OrganMtnsRMP_intro_Planning.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum



**Figure 1-2
Organ Mountains-Desert Peaks
National Monument Surface
Decision Area**

- Bureau of Land Management (the surface decision area)
- The surface decision area includes public land in the Planning area for which BLM has authority to make land use decisions.
- Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 June 29, 2023, OrganMtnsRMP_intro_Surface.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

Federally recognized Tribes in or near the analysis area include the Mescalero Apache, who reside on the Mescalero Indian Reservation in northeastern Otero County; Ysleta del Sur Pueblo (Tigua Reservation), located southeast of El Paso, Texas; and the Fort Sill Apache Tribe, with Tribal trust land near Akela Flats in Luna County, New Mexico. In addition to the Mescalero Apache Tribe, the Pueblo of Ysleta del Sur, and the Fort Sill Apache Tribe, this RMP/EIS will include further engagement with the following federally recognized Tribes that have ancestral and cultural ties to the analysis area: the Comanche Indian Tribe, Hopi Tribe of Arizona, Kiowa Tribe of Oklahoma, Navajo Nation, Pueblo of Acoma, Pueblo of Isleta, Pueblo of Laguna, Pueblo of Tesuque, Pueblo of Zuni, and White Mountain Apache Tribe.

La Corporacion de Los Indigenes de Nuestra Senora de Guadalupe (also known commonly as Tortugas Pueblo) and the Piro-Manso-Tiwa Indian Tribe of the Pueblo of San Juan de Guadalupe (also commonly known as the Piro-Manso-Tiwa Tribe) are composite communities of Tigua, Piro, and Manso Indians and Hispanics. They are daughter colonies of the Pueblo of Ysleta del Sur that formed in Las Cruces sometime between 1850 and 1900. Although the Tortugas Pueblo formally incorporated in 1914, the community has not pursued federal recognition as an Indian Tribe. The Piro-Manso-Tiwa Tribe has applied for federal recognition but remains unrecognized to date. The Tortugas Pueblo and the Piro-Manso-Tiwa Tribe have been involved in the RMP/EIS process, where possible (see **Chapter 4**, Consultation and Coordination).

I.4 ISSUES TO BE ADDRESSED IN THE OMDPNM RMP/EIS

The BLM, cooperating agencies, other federal and state agencies, and the general public raised a number of issues and concerns to be addressed in the RMP. The BLM land use planning process is driven by these issues and concerns to resolve resource management problems and to take advantage of management opportunities. The following sections summarize the broad scope of issues and management concerns that determined the alternatives and the scope of analysis for the OMDPNM RMP/EIS.

I.4.1 Planning Issues

Planning issues are disputes or controversies about existing and potential land and resource allocations, levels of resource use, production, and related management practices. The preparation plan for the OMDPNM RMP, prepared by the BLM in 2017, identified several preliminary issues and management concerns to be addressed in the OMDPNM RMP/EIS (BLM 2017). In addition, the BLM engaged in formal public scoping from June 22, 2023, to July 24, 2023.

The issues identified through internal planning and the public scoping process were grouped into eight general categories. They provide the framework for the goals, objectives, allocations, and management direction considered in the alternatives.

Issue 1. How will the BLM protect natural and cultural resources?

- Presidential Proclamation 9131 identifies resources, objects, and values as lands with visual, cultural, geological, ecological, paleontological, and scientific significance.
- The BLM LCDO initiated inventories that provide the basis for management strategies to be developed in the RMP/EIS. The location and condition of important resources, objects, and values (prehistoric and historic cultural sites, paleontological resources, geological resources, visual resources, and ecological resources) were identified to better manage activities that could harm them.

- What strategies will the BLM develop to prevent vandalism and the illegal excavation or collection of cultural and paleontological resources?
- How can ecological resources be protected in a time of long-term drought, climate change, and declining grassland productivity, including wildfire mitigation?
- Roads, trails, and degradation of native grasslands are vectors for the spread of invasive plants, such as Lehmann's lovegrass. How can BLM management of authorized activities help prevent these from spreading?
- How can the BLM manage invasive plants to protect native vegetation communities?
- What management should be implemented to protect reptiles and amphibians from illegal collection that could come from increased visitation?
- What steps can be taken to exclude invasive fauna from habitat improvements designed for native wildlife?
- Should benchmarks for certain species of grass cover be set as part of restoration goals?
- What management can be implemented to protect the full suite of native species, threatened and endangered species, and species of concern present in the Monument?

Issue 2. How will the BLM manage watersheds and support local communities that depend on them?

- The resources, objects, and values of the Monument are integral components of four major watersheds: the Lower Rio Grande (El Paso-Las Cruces segment), Jornada Draw (a closed basin), Mimbres (another closed basin), and Tularosa Basin (another closed basin). Each unit of the Monument is characterized by a mountainous range, and each contributes to water capture and runoff for these watersheds as well as the regional groundwater basins on which the local economies of Las Cruces, El Paso, other Texas areas, and Ciudad Juarez, Mexico, depend.
- How will management actions impact water supplies and access for environmental justice communities near the Monument?
- How will management actions regarding roads, diversions, fire, and livestock grazing affect watershed conditions?
- What management actions can be taken to enhance vegetation cover, species diversity, and water infiltration? How will enhancing these resources in turn protect Monument objects and benefit the long-term functioning of watersheds?

Issue 3. How will the BLM provide for comprehensive travel and transportation management within the Monument?

- With more than 670 miles of roads, primitive routes, and trails within the Monument, impacts on Monument objects must be considered while providing some level of access for recreation, research, ranching, and other permitted uses. All BLM-administered land will be designated as either closed or limited to motorized vehicle use.
- How can management ensure access for disabled recreational users?
- What designations and management decisions should apply to right-of-way (ROW) corridors or development areas? Are there areas that should be withdrawn or have other stipulations applied to protect other resource values?

- What lands should be retained, proposed for disposal, or acquired within the planning area to improve connectivity and access?
- How will the BLM effectively utilize public engagement for the RMP/EIS development effort to support the development of the comprehensive travel and transportation management plan?

Issue 4. What opportunities will the BLM provide for recreation, education, and interpretation?

- How can recreation management be responsive given increased levels of visitation and use, changes in recreation uses, and local plans for facilitating recreation in the planning area?
- Can access to public land be improved?
- Are there opportunities to improve the recreation setting characteristics to provide users with opportunities for outcome-focused recreation?
- Should the BLM develop facilities and improve recreation access opportunities to meet public demand, to provide for public health and safety, and to direct use away from areas of conflict, and if so, where should they be located?
- Could changes to travel management allow for improved recreation or visitor experiences, or increased resource protection?
- How can management balance recreation use with other resource (for example, wildlife and visual resources) values and uses (for example, livestock grazing)?
- How can management address conflicts between motorized and nonmotorized recreation?
- How can management identify and address erosion in mountainous areas of the Monument?
- What opportunities will the BLM provide for recreation, scientific research (geology, paleontology, ecology, and archaeology), and public education?
- Should the BLM increase education and interpretation for cultural, paleontological, and ecological resources? If so, how?
- How can education and interpretation be used around caves and mines to prevent the spread of white-nose syndrome?

Issue 5. How will the BLM integrate Monument management with the natural and cultural history and uses of the area?

- How will the BLM, in consultation with Tribes and Pueblos, ensure the protection of religious and cultural sites within the Monument and provide access to the sites by members of Indian Tribes for traditional cultural and customary uses, consistent with the American Indian Religious Freedom Act (92 Stat. 469, 42 USC 1996) and Executive Order 13007 of May 24, 1996 (Indian Sacred Sites)?
- How can the cultural and ecological history of the area be incorporated into BLM management?
- How can management incorporate traditional ecological knowledge and Tribal and Pueblo perspectives on historic conditions and traditions?
- How will the BLM ensure continuity of management as inholdings and edge holdings are acquired through future land acquisitions directed under the Dingell Act and the Wilderness Act?
- How will continued uses, such as grazing or mining claims, for exchanged lands be managed?
- How will the BLM manage existing and future ROWs to accommodate future needs while protecting Monument objects?

Issue 6. How will the BLM protect the unique characteristics of special designation areas?

- How should Monument management protect wilderness character in designated wilderness areas?
- How can restoration methods, such as shrub removal and grassland restoration, be conducted in a manner that preserves wilderness character in designated wilderness?

Issue 7. How should livestock grazing be managed in the Monument?

- How should the BLM manage grazing allotments to reduce conflicts with aplomado falcon nesting habitat and to maintain intact forage?
- How should livestock grazing be administered as allottees relinquish grazing permits?
- How should the BLM manage for livestock grazing and range improvements while maintaining ecosystem functions in delicate desert ecosystems and grasslands and protecting Monument resources, objects, and values?
- How should the BLM manage for livestock grazing while preserving historic and cultural sites?
- How should the BLM manage for livestock grazing while preserving wilderness character?

Issue 8. How will the BLM manage for visual resources?

- Should visual resource management class allocations be updated in light of new special area designations and the results of the 2017 visual resource inventory?
- How should the impacts of valid existing rights, including existing ROWs, on visual resource values be addressed?

I.4.2 Issues Considered but Not Further Analyzed

Although the BLM considered all issues, not all issues raised during the public involvement process are analyzed in the RMP/EIS. Other issues are relevant to site-specific or implementation-level decisions, but they are not relevant to this RMP/EIS process. These issues, which were considered but not analyzed further, are presented below, by issue category. Additional information on issues not analyzed in detail is included in **Section 3.1.1**.

- How should the BLM identify and manage lands with wilderness characteristics?
- How will management address the casual collection of minerals (for example, xenoliths at Kilbourne Hole), petrified wood, and common non-vertebrate paleontological resources throughout the Monument?

I.5 LEGAL CONSIDERATIONS

The following are key laws applicable to this RMP/EIS process. Additional applicable laws and regulations are discussed as appropriate throughout the RMP/EIS.

- FLPMA—The FLPMA constitutes the so-called organic act for the BLM and requires the agency to execute its management powers under a land use planning process based on multiple-use and sustained-yield principles.
- NEPA—NEPA requires the federal government to thoroughly assess the environmental consequences of a major federal action, in collaboration with interested groups and the public, before taking such action.

- The Dingell Act—This act designated approximately 241,554 acres in the Monument as wilderness and components of the National Wilderness Preservation System, in accordance with the Wilderness Act (16 USC 1131 et. seq.).
- Omnibus Public Lands Management Act of 2009—This act designated the Prehistoric Trackways National Monument at the south end of the Robledo Mountains. It required a stand-alone management plan for the area, removing it from the decision area for this RMP/EIS.

I.6 PLANNING PROCESS FOR THE OMDPNM RMP/EIS

The RMP preparation process employs several steps according to the BLM Land Use Planning Handbook, H-1601 (BLM 2005). The public is encouraged to participate throughout the planning process, and the BLM is mandated to support and allow for public participation and review. The BLM also collaborated with cooperating agencies during development of the RMP/EIS. **Chapter 4**, Consultation and Coordination, provides detailed information about the involvement of the public and other agencies throughout the RMP/EIS process. This process also requires the expertise of an interdisciplinary team of resource specialists to complete each step.

Four alternatives—A, B, C, and D—are examined in this Draft RMP/EIS, as described in **Chapter 2**, Alternatives. The BLM developed these alternatives to respond to issues identified through scoping and management concerns. The BLM identified and evaluated the predicted effects resulting from each alternative. A description of the existing environment in the planning area and the potential environmental consequences are discussed in **Chapter 3**.

At the close of the comment period on this Draft RMP/EIS, the BLM will review and incorporate public comments, as appropriate, and publish the proposed RMP/final EIS. This publication will be followed by a 30-day protest period and governor’s consistency review. Pending the results of the protest period and consistency review, the BLM may publish the approved RMP and Record of Decision.

Over time, the BLM will implement, monitor, and evaluate actions, resource conditions, and trends to determine whether implementation of the RMP is occurring as planned, whether management goals and objectives are being met, and whether there are unanticipated results from implementation. Monitoring and evaluation are essential components of an adaptive management approach, which will enable the BLM to detect issues early enough to adjust implementation strategies, as necessary, to assure goals and objectives are achieved. The BLM will keep the RMP current through minor maintenance, amendments, or revisions as demands on resources change or new information is acquired.

I.7 RELATIONSHIP TO BLM POLICIES, PLANS, AND PROGRAMS

The OMDPNM RMP/EIS will replace the Mimbres RMP for management within the decision area.

Until the BLM New Mexico state director approves the OMDPNM RMP and signs a Record of Decision for the associated environmental analysis, the BLM LCDO will continue to manage objects, resources, and resource values within the Monument’s geographic boundaries in accordance with (1) Presidential Proclamation 9131; (2) the Dingell Act; and (3) the Mimbres Approved RMP/Record of Decision land use allocations and management goals, objectives, and direction.

I.7.1 Standards for Public Land Health and Guidelines for Livestock Grazing Management

The alternatives analyzed in this RMP/EIS include management direction intended to complement or support, rather than replace, the BLM's Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2001). The BLM New Mexico state director developed these standards and guidelines in consultation with the New Mexico Resource Advisory Committee. The guidelines were approved by the Secretary of the Interior in January 2001.

The fundamentals of rangeland health stated in 43 CFR 4180 include four elements: watershed, ecological processes, water quality, and plant and animal habitats. The objectives for the public land health standards are to promote healthy, sustainable ecosystems; to accelerate restoration and improvements of public lands to properly functioning conditions; and to provide for the sustainability of industry and communities that depend on productive, healthy public land. The alternatives analyzed in this Draft RMP/EIS incorporate the principle that cumulative effects of all management activities, including federally authorized activities, determine whether the standards for land health would be achieved. Consequently, livestock grazing's effects are not the only concern.

Presidential Proclamation 9131 provides the following regarding grazing on Organ Mountain-Desert Peaks National Monument lands:

Laws, regulations, and policies followed by the BLM in issuing and administering grazing permits and leases on lands under its jurisdiction shall continue to apply with regard to the lands in the Monument, consistent with the protection of the objects identified above.

To determine livestock grazing compatibility and the impacts grazing could exact on objects of scientific and historic interest protected in the Monument, with attention given to the enhanced land use conservation and preservation principles employed to develop land use plan allocations and resource management goals and objectives, the BLM Las Cruces District Office will perform thorough land health evaluations and grazing compatibility assessment(s) to develop appropriate grazing management guidance and decisions consistent with Presidential Proclamation 9131's direction to "preserve the objects of scientific and historic interest on the Organ Mountains-Desert Peaks lands."

The surveys and evaluations will be completed to establish the status of ecosystem structures, functions, or processes within a specified geographic area, to include watershed health analysis. Surveys and assessments will be performed by collecting, synthesizing, and interpreting land and watershed health status from observations, inventories, and long-term monitoring programs including the Assessment, Inventory, and Monitoring (AIM) strategy. The three standards of rangeland health identified in the January 12, 2001 Record of Decision *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management*⁹, hereby incorporated by reference, are: 1) the Upland Sites standard; (2) the Biotic Communities, including Native, Threatened, Endangered and Special Status Species standard; and (3) the Riparian Sites standard. The goal of these standards is to ensure in the short term and long term there will be beneficial impacts to water quality, riparian and terrestrial wildlife habitat, wildlife, riparian area functions, ecological processes, rangeland productivity and plant cover and diversity. In the long term, healthy public lands will be sustained both in amount and quality. Upon completion of these surveys and

⁹ [Standards for Public Land Health and Guidelines for Livestock Grazing in New Mexico \(blm.gov\)](https://www.blm.gov/standards-for-public-land-health-and-guidelines-for-livestock-grazing-in-new-mexico)

evaluations, the BLM will implement informed grazing management actions and decision making “consistent with the protection of objects of scientific and historic interest.”

How Will the Data be Used?

The livestock grazing compatibility surveys and evaluations will help the BLM: 1) ensure that significant progress is made toward achieving the standards for public land health, 2) evaluate grazing allotments for permit renewal, and 3) determine what level of livestock grazing is compatible with protection of the objects of scientific and historic interest identified in Presidential Proclamation 9131. Land Health Evaluations would be completed on grazing allotments prior to permit renewal and would include allotment field visits and a thorough evaluation of available data as described in the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* and regulatory guidance at 43 CFR Subpart 4180 et seq (*Fundamentals of Rangeland Health Standards and Guidelines for Grazing Administration*). The Monument Manager/Authorized Officer shall establish livestock grazing management practices informed by the livestock grazing compatibility surveys and evaluations in conjunction with Presidential Proclamation 9131 and other appropriate Federal laws, regulations, and agency policy.

1.7.2 El Camino Real de Tierra Adentro NHT

The El Camino Real de Tierra Adentro NHT Comprehensive Management Plan (NPS and BLM 2004), written in cooperation with the National Park Service (NPS), responds to the trail’s congressional designation and the requirements of the National Trails System Act. It identifies strategies to meet the following goals: a high-quality visitor experience, coordinated interpretation and education, effective administration, and active resource protection.

The El Camino Real de Tierra Adentro NHT is not within the Monument; however, it follows the Rio Grande Valley. The BLM includes an analysis of the extent to which the Monument is part of the NHT viewshed in **Chapter 3**, Affected Environment and Environmental Consequences.

1.7.3 Other BLM Land Use Plans

The draft supplement for the TriCounty RMP/EIS is currently under development. The TriCounty planning area encompasses the three eastern counties of the LCDO: Doña Ana, Sierra, and Otero Counties. Sierra and Otero Counties are currently governed by the White Sands RMP. Doña Ana County is currently governed by the Mimbres RMP. These three counties are merged into a new planning unit with the TriCounty RMP.

The BLM LCDO Fire Management Plan (BLM 2004a) and the 2004 Statewide Resource Management Plan Amendment for Fire and Fuels (BLM 2004b) are used to coordinate the LCDO’s fire management program in the Gila-Las Cruces and the Lincoln fire management zones. The Joint Powers Master Agreement outlines agreements and commitments among federal agencies and the State of New Mexico for wildland fire protection, joint fire management, and large-fire support (DOI 2003). The agencies jointly conduct mutual interest projects, within their authority, to maintain or improve fire management capability.

While not all areas within the LCDO’s authority are entirely in the planning area, fire management resources from all areas may be used in the Monument planning area. Effective fire management will require close coordination among local and regional jurisdictions. The 2001 Federal Wildland Fire

Management Policy provides guiding principles for federal agencies that are fundamental to the success of the Federal Wildland Fire Management Program.

I.8 COLLABORATION AND CONSULTATION

The BLM is engaging in ongoing collaboration with federal, Tribal, state, and local governments as part of this planning process. This collaboration includes government-to-government consultation with affected Native American Tribes, the participation of cooperating agencies, and consultation with regulatory agencies, as required by law. **Chapter 4, Consultation and Coordination**, provides more information about the involvement of these stakeholders.

Chapter 2. Alternatives

This chapter details Alternatives A through D for the Organ Mountains-Desert Peaks National Monument Draft Resource Management Plan/Environmental Impact Statement (Draft RMP/EIS) and includes references to maps (found in **Appendix A**) identifying where allocations would apply. The BLM formulated the alternatives in response to issues and concerns identified through public scoping and also in an effort to resolve deficiencies with current management strategies and to explore opportunities for enhanced management of resources and resource uses. A **Glossary** that provides a definition of terms can be found following the **References** section.

2.1 DESCRIPTION OF THE ALTERNATIVES

RMP decisions consist of identifying and clearly defining goals and objectives (desired outcomes) for resources and resource uses, followed by developing allocations for allowable resource uses (allocations) and management direction necessary for achieving the goals and objectives. These critical determinations guide future land management directions and subsequent site-specific implementation actions to meet multiple-use and sustained-yield mandates while sustaining land health.

Each alternative must respond to the issues identified during scoping, seek to resolve conflicts among resources and resource uses, meet the purpose of and need for the RMP, and be feasible to implement. After considering the issues and the purpose and need, the BLM developed three action alternatives to analyze in detail, in addition to the No Action Alternative (Alternative A). Each alternative contains a discrete set of objectives and management directions constituting a separate RMP. Resource program goals are met in varying degrees with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses also differs, including allocations, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law or are not tied to planning issues, there are typically few or no distinctions between alternatives.

Meaningful differences among the alternatives are described in **Table 2-1** (Summary of the Alternatives). **Table 2-2** (Alternatives Matrix) provides a complete description of proposed decisions for each alternative, including goals, objectives, management direction, and allocations for individual resource programs. Maps in **Appendix A** provide a visual representation of differences between alternatives.

GIS data have been used to perform acreage calculations and to generate the maps in **Appendix A**. Calculations depend on the quality and availability of data. Most calculations in this RMP are rounded to the nearest 1 acre or 0.1 mile. Some calculations in **Chapter 3**, Affected Environment and Environmental Consequences are rounded to the nearest 1 mile. Given the scale of the analysis, the compatibility constraints between data sets, and the lack of data for some resources, all calculations are approximate; they serve for comparison and analytic purposes only. Likewise, the maps in **Appendix A** are provided for illustrative purposes and subject to the limitations discussed above. The BLM may receive additional or updated data; therefore, acreages may be recalculated and revised at a later date.

**Table 2-1
Summary of the Alternatives**

Resource, Resource Use, or Special Designation (acres)¹	Alternative A	Alternative B	Alternative C	Alternative D
Visual Resource Management (VRM)	Figure 2-1	Figure 2-2	Figure 2-2	Figure 2-2
VRM Class I	241,070	244,122	244,122	244,122
VRM Class II	41,099	252,467	252,467	252,467
VRM Class III	25,735	0	0	0
VRM Class IV	188,522	0	0	0
Total	496,591	496,591	496,591	496,591
Livestock Grazing²	Figure 2-3	Figure 2-3	Figure 2-3	Figure 2-3
Available for livestock grazing	492,062	492,062	492,062	492,062
Unavailable for standard term livestock grazing leases	4,529	4,529	4,529	4,529
Total	496,591	496,591	496,591	496,591
Minerals	Figure 2-4	Figure 2-4	Figure 2-4	Figure 2-4
Withdrawn from mineral entry, location, leasing, disposal, or sale	496,591	496,591	496,591	496,591
Recreation	Figure 2-5	Figure 2-6	Figure 2-7	Figure 2-8
Doña Ana Mountains Special Recreation Management Area (SRMA)	7,284	7,283	5,858	7,284
Organ Mountains SRMA	52,240	55,710	36,658	0
Picacho Peak SRMA	0	3,355	3,355	0
Total	59,524	66,348	45,871	7,284
Public Safety No-Shooting Zones	Figure 2-9	Figure 2-10	Figure 2-11	Figure 2-12
Aguirre Spring Recreation Area, within one-half mile	0	1,553	1,553	1,553
Baylor Canyon and trailheads, within one-half mile	0	3,264	3,264	3,264
Doña Ana Mountains SRMA	0	7,284	5,858	2,804
Dripping Springs Natural Area, within one-half mile	0	2,536	2,536	2,536
Kilbourne Hole NNL, rim	5,460	0	0	0
Kilbourne Hole NNL, within one-half mile	0	9,457	9,457	9,457
Picacho Peak, within one-half mile	0	4,289	4,289	4,289
Sierra Vista trailheads, within one-half mile	0	1,820	1,820	1,820
Soledad Canyon Day Use Area, within one-half mile	0	953	953	953
Total	5,460	31,156	29,731	26,677
Lands, Realty, and Cadastral Survey	Figure 2-13	Figure 2-14	Figure 2-15	Figure 2-16
ROW exclusion	286,439	288,169	286,497	245,057
ROW avoidance	210,152	208,421	210,094	251,534
Open to ROWs	0	0	0	0
Total	496,591	496,591	496,591	496,591

Resource, Resource Use, or Special Designation (acres)¹	Alternative A	Alternative B	Alternative C	Alternative D
Land for retention	496,591	496,591	496,591	496,591
Land available for disposal	0	0	0	0
Total ³	496,591	496,831	496,831	496,831
Transportation and Access, Motorized	Figure 2-17	Figure 2-18	Figure 2-19	Figure 2-20
Closed to Off-highway vehicles (OHVs)	242,889	269,697	255,870	239,596
Limited to designated roads	253,702	226,894	240,721	256,994
Total	496,591	496,591	496,591	496,591
Transportation and Access, Mechanized	N/A	Figure 2-21	N/A	N/A
Closed to mechanized use	239,596	239,596	239,596	239,596
Limited to designated roads and trails	256,994	256,994	256,994	256,994
Total	496,591	496,591	496,591	496,591
Special Designations				
Areas of Critical Environmental Concern (ACECs)	Figure 2-22	Figure 2-23	Figure 2-24	N/A
Broad Canyon	0	4,720	0	0
Doña Ana Mountains	1,427	1,427	1,427	0
East Potrillo Mountains	0	9,040	0	0
Picacho Peak	0	949	0	0
Robledo Mountains	7,829	0	0	0
Organ/Franklin Mountains	54,817	55,223	36,658	0
Total	64,073	71,359	38,085	0
National Scenic and Historic Trails	Figure 2-25	Figure 2-25	Figure 2-25	Figure 2-25
Butterfield Overland NHT	4,842	4,842	4,842	4,842
Research Natural Areas (RNAs)	Figure 2-22	N/A	N/A	N/A
Aden Lava Flow	3,736	0	0	0
NNLs	Figure 2-26	Figure 2-26	Figure 2-26	Figure 2-26
Kilbourne Hole	5,460	5,460	5,460	5,460
Wilderness	Figure 2-26	Figure 2-26	Figure 2-26	Figure 2-26
Designated wilderness	239,596	239,596	239,596	239,596

Source: BLM GIS 2022

Notes:

¹ Acres are rounded to the nearest 1 acre; totals that add up to slightly more or less than the total Monument acreage of 496,591 acres are due to rounding. The margin of error for acreage is less than 5 percent.

² Land use allocations and management goals, objectives, and direction associated with livestock grazing apply to BLM-administered lands located within the congressionally established geographic boundaries of the Monument, regardless of whether a current grazing allotment is wholly or partially within the congressionally established geographic boundaries of the Monument. Grazing allotments that encompass BLM-administered lands within and beyond the congressionally established geographic boundaries of the Monument have been included in the planning area for analysis purposes; however, only those BLM-administered lands within the congressionally established geographic boundaries of the Monument are subject to this RMP's land use allocations and management goals, objectives, and direction for livestock grazing. Livestock grazing and grazing allotments located beyond the congressionally established geographic boundaries of the Monument will be managed through the appropriate BLM land use plan for the subject BLM-administered lands.

³ Lands targeted for acquisition are not currently administered by the BLM; therefore, they are additive to the total amount of BLM-administered land in the Monument.

2.1.1 Alternative A (No Action Alternative)

Alternative A meets the requirement that a No Action Alternative be considered. This alternative continues current management direction and prevailing conditions derived from existing planning decisions. Goals and objectives for resources and resource uses are based on the applicable portions of the 1993 Mimbres RMP (BLM 1993), along with associated amendments. The management laid out in Presidential Proclamation 9131 (3 CFR 9131 [2014]), which established the Monument, would supersede decisions from the Mimbres RMP. Laws, regulations, and BLM policies that supersede RMP decisions, such as the Dingell Act (Public Law No. 116-9), would also apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate allocations and restrictions pertaining to activities such as recreation, travel management, and livestock grazing would also remain the same. Three ACECs would continue to be managed to protect relevant and important values. Additionally, the BLM would continue to manage one NHT, one RNA, one NNL, and ten designated wilderness areas. The BLM would also continue to manage two SRMAs.

The Monument would continue to be withdrawn from mineral entry, location, leasing, or sale and closed to casual collection of minerals, petrified wood, and common non-vertebrate fossils. The entire Monument would be managed as either ROW exclusion or avoidance. In areas not managed as exclusion, new ROW authorizations would be issued only “when they are necessary for the care and management of the Monument ROVs [resources, objects, and values] or are mandated by law” (Proclamation No. 9131, 3 CFR 9131 [2014]). Except in areas closed to OHV use, such use would continue to be limited to designated roads. Similarly, mechanized use would continue to be limited to designated roads and trails, except in closed areas.

2.1.2 Alternative B

Alternative B emphasizes maintaining or enhancing habitat with the goal of achieving reference plant communities and supporting species augmentation and reintroduction efforts, while allowing for appropriate uses through allocations (such as recreation, OHV and mechanized use, and livestock grazing). Under Alternative B, the BLM would provide opportunities for recreation and travel with the most restrictions in terms of areas closed to OHV use. Some areas of the Monument would also be closed to recreational shooting. Portions of one allotment would be unavailable to grazing. This is because Alternative B is the most proactive in promoting conservation and recovery of threatened, endangered, and other special status species, as well as protecting other social and scientific values. Alternative B would designate three new ACECs to be managed to protect scenic, cultural, and biological resource values. It would undesignate one ACEC and the RNA, which both fall entirely within designated wilderness areas.

2.1.3 Alternative C

Alternative C is similar to Alternative B, but it provides for more flexibility in the management of natural and cultural resources with resource uses, such as recreation, OHV and mechanized use, and livestock grazing. Under Alternative C, the BLM would provide opportunities for recreation and travel management with fewer restrictions than under Alternative B, but more than under Alternative A, in terms of areas closed to OHV travel and unavailable to grazing. The same areas of the Monument would be closed to recreational shooting under Alternative C and Alternative B, except that a smaller portion of the Doña Ana Mountains would be closed under Alternative C. Identical to Alternative B, Alternative C would undesignate one ACEC and the RNA, which both fall entirely within designated wilderness areas.

2.1.4 Alternative D

Alternative D emphasizes creation of opportunities for resource uses, such as recreation, OHV and mechanized use, and livestock grazing, while maintaining ecological function and meeting land capability to protect Monument resources, objects, and values. Alternative D would have the fewest restrictions on recreation and travel management, although all areas not closed to OHV use would remain limited to designated roads per Proclamation 9131 (3 CFR 9131 [2014]). Of the three action alternatives, this alternative would provide the most opportunity for recreational shooting. Along with the RNA, all ACECs would be undesignated and would be instead managed in accordance with Proclamation 9131 (3 CFR 9131 [2014]) and applicable law and policy.

2.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

2.3 SELECTION OF PREFERRED ALTERNATIVE

The Las Cruces District Manager recommends Alternative C as the preferred alternative. Alternative C balances protection of Monument resources, objects, and values identified in Proclamation 9131 with preservation of access to the Monument for recreation and other uses. It also provides flexibility for subsequent implementation actions. The preferred alternative (Alternative C) consists of components (objectives and management directions) of the other alternatives considered (Alternatives A, B, and D). During public review of this Draft RMP/EIS, the BLM is seeking constructive input regarding the proposals for managing resources and resource uses. After considering these comments, the BLM will develop a Proposed RMP to be evaluated in the Final EIS. The Proposed RMP can be any reasonable combination of objectives and management directions from the four alternatives (Alternatives A, B, C, and D) presented in this Draft RMP/EIS.

2.4 MANAGEMENT GUIDANCE FOR ALTERNATIVES A, B, C, AND D

Table 2-2 provides a description of the land use plan-level allocations and management goals, objectives, and decisions for each discrete alternative. Future implementation-level actions, such as future land use management projects, a recreation area management plan, or a travel and transportation management plan, would be developed using the approved RMP land use allocations and management goals, objectives, and direction identified in the BLM-selected alternative upon RMP approval. Additionally, a recreation appendix will be developed between the draft and final EIS. The appendix will identify the key elements of proposed recreation management areas, including targeted recreation activities, experiences, benefits, outcomes, allowable use activities, and management actions associated with each area.

Acreages for alternatives in this chapter are calculated based on current information and may be adjusted in the future through RMP maintenance as conditions warrant.

2.4.1 How to Read Table 2-2

The following describes how **Table 2-2** is written and formatted to show the land use plan decisions proposed for each alternative. Refer to **Diagram 2-1** on the next page for an example of how to read **Table 2-2**.

- Per Appendix C of the BLM's Land Use Planning Handbook H-1601-1, land use plan decisions are broadscale decisions that guide future land management directions and subsequent site-specific implementation decisions. Land use plan decisions fall into two categories, which establish the

base structure for **Table 2-2: desired outcomes (goals and objectives), and allowable uses and actions** to achieve outcomes.

- *Goals* are broad statements of desired outcomes (e.g., maintain ecosystem health and productivity, promote community stability, ensure sustainable development) that usually are not quantifiable.
- *Objectives* identify specific desired outcomes for resources. Objectives are usually quantifiable and measurable and may have established time frames for achievement (as appropriate).
- *Allowable uses.* Land use plans must identify uses, or allocations, that are allowable, restricted, or prohibited on lands and mineral estate. These allocations identify surface lands and/or subsurface mineral interests where uses are allowed, including any restrictions that may be needed to meet goals and objectives. Land use plans also identify lands where specific uses are excluded to protect resource values. Certain lands may be open or closed to specific uses based on legislative, regulatory, or policy requirements or criteria to protect sensitive resource values.
- *Management actions.* Land use plans must identify the actions anticipated to achieve desired outcomes, including actions to maintain, restore, or improve land health. These actions include proactive measures (e.g., measures that will be taken to enhance watershed function and condition), as well as measures or criteria that will be applied to guide day-to-day activities occurring on public land. Land use plans also establish administrative designations such as ACECs, recommend proposed withdrawals, land tenure zones, and recommend or make findings of suitability for congressional designations (such as components of the National Wild and Scenic River System).
- In general, only those resources and resource uses that have been identified as planning issues have notable differences between the alternatives.
- Management direction that is applicable to more than one alternative is indicated by denoting that management direction as the “Same as Alternative B,” for example.

**Diagram 2-1
How to Read Table 2-2**

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
23.	Management Direction: No similar management direction.	Management Direction: Where appropriate, install informational kiosks with interpretive material to educate public on sensitive plants and wildlife, their habitats, and minimizing impact.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
24.	Management Direction: No similar management direction.	Management Direction: Promote conservation of amphibians and reptiles in the Monument through habitat protection, education, monitoring, and research.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
25.	Management Direction: No similar management direction.	Management Direction: Complete studies to better understand the effects of increased visitation on wildlife and sensitive plants.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
26.	Management Direction: No similar management direction.	Management Direction: All caves on the Monument with suitable bat habitat are closed to non-permitted use, with the exception of traditional Tribal use.	Management Direction: Any actions that could adversely affect significant caves will be deferred or denied. BLM will take appropriate protection measures as needed.	Management Direction: Same as Alternative C.
27.	Management Direction: No similar management direction.	Management Direction: Adhere to best management practices for preventing spread of white nose syndrome when entering and reclaiming abandoned mine land sites.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
28.	Special Status Species			
29.	Goals: <ul style="list-style-type: none"> Prioritize the protection and management of habitat for known populations of Federal or State listed species, and State species of greatest conservation need to prevent the need for listing of Federal candidates and BLM sensitive species, and to assist in recovery of listed species. 			
30.	Objective: No similar objective.	Objective: Coordinate and collaborate with NMDGF, USFWS, DOD, and other neighboring public landowners in management of special status species.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
31.	Management Direction: The Organ and Franklin Mountains ACEC: Monitor the area in accordance with the concepts of limits of acceptable change with emphasis on the most biologically or culturally sensitive areas.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: No similar management direction.
32.	Management Direction: Prescribe burning, water	Management Direction: No similar management	Management Direction: No similar management	Management Direction: No similar management direction.

Management direction that is the same as another alternative is noted as “Same as Alternative ___.”

Where a management direction in one or more alternatives does not apply to another, for example Alternative D, it states, “No similar management direction.”

2.4.2 Alternatives Matrix Contents

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**Table 2-2
Alternatives Matrix – Monument**

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Monument Authorities			
1.	<ul style="list-style-type: none"> • Antiquities Act of 1906 • Presidential Proclamation 9131 of May 21, 2014 • Federal Land Policy and Management Act of 1976 • Omnibus Public Land Management Act of 2009 • Taylor Grazing Act of 1934 			
	Monument Map			
2.	<ul style="list-style-type: none"> • See Figure I-2 			
	Common to All Resources			
3.	Goals common to all Monument resources: <ul style="list-style-type: none"> • Preserve the objects of scientific and historic interest on Monument lands. • Protect, preserve, and restore Monument objects and values and reduce conflicts or minimize impacts on each resource or resource use. • Promote scientific research to comply with management directives and protect the natural and cultural landscape in the Monument. 			
4.	Management direction common to all Monument resources: <ul style="list-style-type: none"> • Support and promote research projects and publication of research articles based on work conducted in the Monument and establish an in-house reference collection for primary research. • Maintain the Monument Science Plan, including identifying and updating research priorities on an as-needed basis. • As an implementation-level planning effort, develop a Monument Inventory and Monitoring Plan to: identify and inventory objects of scientific and historic interest; establish near and long-term preservation and conservation goals for Monument objects and values; and establish metrics-based monitoring methodologies and protocols to assess Monument objects and values for indications of change. 			
	Fish, Wildlife, and Habitat			
5.	Goals: <ul style="list-style-type: none"> • Manage biological integrity of terrestrial and aquatic ecosystems to maintain, restore, and/or improve habitat, fish and wildlife populations, ecosystem health, ecological processes, and overall biodiversity. • Maintain the full suite of native migratory and resident wildlife species and the habitats that they rely on, including invertebrate species such as pollinators and endemic mollusks and crustaceans. • Address nonnative wildlife species in the Monument through active management strategies and mitigation measures. Maintain or restore wildlife habitat connectivity between populations of native wildlife within the Monument and outside of the Monument. 			
6.	Objective: Improve, enhance and expand wildlife habitat on public land for both consumptive and non-consumptive uses as well as biological diversity.	Objective: Same as Alternative A.	Objective: Same as Alternative A.	Objective: Same as Alternative A.
7.	Objective: Develop and implement fish and wildlife management strategies that assist State agencies in implementing fish and wildlife resource plans.	Objective: Coordinate and collaborate with the New Mexico Department of Game and Fish (NMDGF, US Fish and Wildlife Service (USFWS), Department of Defense, and other neighboring public landowners in management of habitat for wildlife species.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
8.	Objective: No similar objective.	Objective: Work with adjacent landowners and agencies to protect connectivity of wildlife habitat and ensure consistent management of wildlife connectivity outside of the Monument.	Objective: Same as Alternative B.	Objective: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
9.	Objective: No similar objective.	Objective: Work with cooperating agencies to eradicate or control invasive species in an environmentally sound and cost-effective manner and prevent establishment of invasive species elsewhere. Promote research on invasive species eradication, control, and prevention.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
10.	Management Direction: Develop the following habitat management plans (HMPs): Robledo Mountains HMP, Las Uvas Mountains HMP, West Potrillo Mountains HMP, Riparian and Aquatic HMP.	Management Direction: Develop and update habitat management plans for areas as deemed necessary.	Management Direction: Same as Alternative B.	Management Direction: No similar management direction.
11.	Management Direction: It is intended that wildlife population goals can be reached without reduction of livestock numbers (through grazing management and land treatments.) Population goals may be revised as necessary through the HMP monitoring and evaluation process.	Management Direction: Conduct utilization monitoring, land health assessments, and indicators of rangeland health to ensure permitted AUMs will not lead to degradation of wildlife habitat and are compatible with restoring wildlife habitat.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
12.	Management Direction: Animal damage control (ADC) actions will be conducted in accordance with annual ADC plans. The plan will specify times and conditions for control activities in accordance with management prescriptions, objectives, and goals.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
13.	Management Direction: Grazing of domestic sheep and goats will not be allowed in bighorn sheep habitat areas. Existing guidance will also address buffer areas for grazing domestic sheep.	Management Direction: Grazing of domestic sheep and goats is prohibited in the Monument.	Management Direction: Same as Alternative B.	Management Direction: Grazing of domestic sheep and goats is prohibited in currently occupied or potential bighorn sheep habitat areas of the Monument designated by NMDGF.
14.	Management Direction: Within the Doña Ana Mountains ACEC, prescriptions applicable to wildlife habitat include: <ul style="list-style-type: none"> Exclude feral goats and other exotic animals. Close roads that provide access for illegal plant collecting. 	Management Direction: Within the Doña Ana Mountains ACEC prescriptions applicable to wildlife habitat include: <ul style="list-style-type: none"> Exclude feral domestic animals. 	Management Direction: Same as Alternative B.	Management Direction: No similar management direction.
15.	Management Direction: Within the Organ/Franklin Mountains ACEC, prescriptions applicable to wildlife habitat include: <ul style="list-style-type: none"> Monitor the area in accordance with the concepts of limits of acceptable change with emphasis on the most biologically or culturally sensitive areas. 	Management Direction: Within the Organ/Franklin Mountains ACEC, prescriptions applicable to wildlife habitat include: <ul style="list-style-type: none"> Monitor impacts from recreation on wildlife and their habitats. 	Management Direction: Same as Alternative B.	Management Direction: No similar management direction.
16.	Management Direction: All rangeland and watershed improvements will continue to be designed to achieve watershed, range, and wildlife objectives. This includes location and design of waters and vegetation manipulation projects. Fences are designed to minimize resistance to wildlife movement.	Management Direction: Identify cooperatively managed fences for removal or modification to promote wildlife movement.	Management Direction: Same as Alternative B	Management Direction: No similar management direction.
17.	Management Direction: Monitoring of wildlife habitat by key species utilization will continue to be conducted as part of HMP and rangeland program monitoring. The information obtained from vegetation transects will be incorporated into final grazing decision where appropriate.	Management Direction: Monitoring of wildlife habitat by key species utilization will continue to be conducted as part of HMP and rangeland program monitoring. The information obtained from all available monitoring data will be incorporated into final grazing decisions where appropriate.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
18.	Management Direction: No similar management direction.	Management Direction: Identify where sensitive areas need protection from nonnative ungulates, such as oryx and barbary sheep, and coordinate with NMDGF on appropriate control methods.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
19.	Management Direction: No similar management direction.	Management Direction: Install wildlife-friendly fencing to keep oryx out of sensitive seeps or springs.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
20.	Management Direction: No similar management direction.	Management Direction: Restrict new land uses and, where possible, modify existing land uses in riparian habitats to achieve proper functioning conditions, while restoring and protecting riparian and aquatic ecosystems and restoring plant community structure and composition to meet site potential or site capability.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
21.	Management Direction: No similar management direction.	Management Direction: Conduct vegetation treatments to maintain or enhance the grassland component of upland habitat with the objective of obtaining reference plant communities.	Management Direction: Conduct vegetation treatments to maintain or enhance the grassland component of upland habitat to ensure adequate foliar diversity, cover, and nesting structure to meet habitat needs for grassland birds, including Aplomado falcon.	Management Direction: Conduct vegetation treatments to maintain the grassland component of upland habitat with the objective of meeting land capability as defined in BLM Rangeland Health Guidance.
22.	Management Direction: No similar management direction.	Management Direction: Enhance habitat for potential reintroduction and augmentation of historic species. Work with NMDGF and USFWS to support augmentation and reintroduction efforts.	Management Direction: Maintain habitat for potential reintroduction and augmentation of historic species. Work with NMDGF and USFWS to support augmentation and reintroduction efforts.	Management Direction: Same as Alternative B.
23.	Management Direction: No similar management direction.	Management Direction: Where appropriate, install informational kiosks with interpretive material to educate public on sensitive plants and wildlife, their habitats, and minimizing impact.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
24.	Management Direction: No similar management direction.	Management Direction: Promote conservation of amphibians and reptiles in the Monument through habitat protection, education, monitoring, and research.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
25.	Management Direction: No similar management direction.	Management Direction: Complete studies to better understand the effects of increased visitation on wildlife and sensitive plants.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
26.	Management Direction: No similar management direction.	Management Direction: All caves in the Monument with suitable bat habitat require a permit for use, with the exception of traditional Tribal use.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
27.	Management Direction: No similar management direction.	Management Direction: Adhere to best management practices for preventing spread of white-nose syndrome when entering and reclaiming abandoned mine land sites.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Special Status Species			
28.	Goals: <ul style="list-style-type: none"> Prioritize the protection and management of habitat for known populations of Federal or State listed species, and State species of greatest conservation need to prevent the need for listing of Federal candidates and BLM sensitive species, and to assist in recovery of listed species. 			
29.	Objective: No similar objective.	Objective: Coordinate and collaborate with the NMDGF, USFWS, Department of Defense, and other neighboring public landowners in management of special status species habitat.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
30.	Management Direction: The Organ/Franklin Mountains ACEC: Monitor the area in accordance with the concepts of limits of acceptable change with emphasis on the most biologically or culturally sensitive areas.	Management Direction: The Organ/Franklin Mountains ACEC: Monitor the area in accordance with the concepts of limits of acceptable change with emphasis on the most biologically or culturally sensitive areas.	Management Direction: Same as Alternative B.	Management Direction: No similar management direction.
31.	Management Direction: No similar management direction.	Management Direction: Ensure sensitive habitats for special status species are protected from impacts of nonnative ungulates.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
32.	Management Direction: No similar management direction.	Management Direction: Ensure the BLM sensitive species list is consistent with BLM Manual 6840 and the Species of Greatest Conservation Need and Key Habitats identified in the New Mexico State Wildlife Action Plan (2017) or other applicable plans.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
33.	Management Direction: No similar management direction.	Management Direction: Surface-disturbing activities are not permitted in suitable special status plant species habitat (117,229 acres).	Management Direction: Surface-disturbing activities are not permitted in known occupied habitat for special status plant species (167 acres). The BLM would work with universities and other research partners (for example, the US Geological Survey) to develop habitat models for rare and special status plants within the Monument to inform avoidance areas and enable habitat protection for rare and special status plants.	Management Direction: Same as Alternative A.
34.	Management Direction: No similar management direction.	Management Direction: Conduct vegetation treatments to maintain or enhance the grassland component of upland habitat with the objective of obtaining reference plant communities.	Management Direction: Conduct vegetation treatments to maintain or enhance the grassland component of upland habitat to ensure adequate foliar diversity, cover, and nesting structure to meet habitat needs for grassland birds, including Aplomado falcon.	Management Direction: Conduct vegetation treatments to maintain the grassland component of upland habitat with the objective of meeting land capability.
35.	Management Direction: No similar management direction.	Management Direction: Ensure appropriate adaptive management, protections, and mitigations are developed and applied by continuing to monitor and inventory special status species and their habitats throughout the Monument, including assessing the effects of climate change on species. For any future proposed surface-disturbing activities in suitable habitat, require surveys for special status species and appropriate mitigation.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
36.	Management Direction: No similar management direction.	Management Direction: If and when new species are listed under the Endangered Species Act, conduct programmatic consultation with USFWS on management actions, including, but not limited to, grazing permit renewal and vegetation treatments, to ensure actions are compliant with the Endangered Species Act.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
Vegetation Communities				
37.	Goals: <ul style="list-style-type: none"> Maintain desired plant communities that produce the kind, proportion, and amount of vegetation necessary for maintaining and conserving productive and diverse populations of plants and animals, which sustain ecological functions and processes. Manage vegetation resources to produce healthy and vigorous native plant communities with an abundance and distribution of vegetative density and diversity within the Monument. Manage vegetation resources to achieve climate resilient habitats. Maintain, stabilize, and enhance natural watershed function and ecosystem characteristics. Ecological sites are in a productive and sustainable condition. Soils are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The kind, amount, and/or pattern of vegetation provide protection on a given site to minimize erosion and assist in meeting State and Tribal water quality standards. Manage riparian habitat and wetlands (seeps and springs) to be reproductive, properly functioning, and in sustainable condition, within the capability of the site. Address invasive plant species in the Monument through active management strategies to control spread through mitigation measures. Continue to implement management techniques that include manual, mechanical, chemical, and biological treatment methods to manage native and nonnative invasive species. 			
38.	Objective: Maintain a desired plant community that produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use plan goals and activity plan objectives established for each site.	Objective: No similar objective.	Objective: No similar objective.	Objective: No similar objective.
39.	Objective: No similar objective.	Objective: Evaluate, restore, and improve rangeland conditions to support permitted livestock grazing activities and wildlife browsing while maintaining healthy, native ecological sites that compliment multiple uses permitted in the Monument.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
40.	Objective: No similar objective.	Objective: Eradicate or control invasive species in an environmentally sound and cost-effective manner and prevent establishment of invasive species elsewhere.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
41.	Objective: No similar objective.	Objective: Maintain, improve, and restore overall watershed health and promote climate resiliency by meeting or moving toward the riparian and upland land health standards, as well as the site characteristics, plant communities and site interpretations identified in ecological site descriptions and standard habitat sites.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
42.	Objective: Emphasize water rights and watershed management specifically related to water quality and sediment yields.	Objective: Meet or move toward riparian and upland land health standards to protect and restore watersheds and stream systems and reduce nonpoint source pollution through enhanced soil stability and productivity, increased soil moisture, decreased erosion, stable hydrologic functions, and thriving desired vegetation communities.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
43.	Objective: No similar objective.	Objective: Maintain, improve, and restore grasslands and forb diversity by preventing shrubland encroachment.	Objective: Same as Alternative B.	Objective: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
44.	Objective: No similar objective.	Objective: Monitor for or regularly assess riparian habitat using the proper functioning condition assessment or most currently available monitoring methods.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
45.	Management Direction: Establish desired plant community objectives in the development of grazing activity plans (allotment management plans [AMPs]).	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
46.	Management Direction: Evaluate activities in fragile land areas.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
47.	Management Direction: Implement land treatments. The use of herbicide and fire for vegetation treatments is planned for a total of ca. 1,700,000 acres within the Mimbres Planning Area [acres extend beyond the Monument]. Acreage targets are not established for restoration via changes in grazing management. Chemical herbicides are not to be used in areas over 10 percent slope or within one-half mile of perennial streams. Treatment areas are to be rested from grazing during the growing season for two or more years post-treatment.	Management Direction: Implement vegetation treatments in accordance with the 2007 and 2016 Vegetation Treatment Programmatic EISs (BLM 2007, 2016a) or other applicable documents and use relevant data to determine likelihood of achieving treatment goals in ecological context.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
48.	Management Direction: Implement vegetation monitoring plots on all allotments in category “I” and in categories “M” and “C” as needed.	Management Direction: Incorporate ongoing vegetation monitoring methodologies throughout the Monument and on newly acquired and newly administered lands (for example, riparian monitoring, nonnative invasive plant monitoring, erosion monitoring, and rangeland monitoring).	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
49.	Management Direction: No similar management direction.	Management Direction: Work with other entities (agencies, research/academia, and others) to supplement the BLM's monitoring efforts (expanding on methods, types, or amounts of monitoring).	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
50.	Management Direction: Establish exclosures to provide ungrazed vegetation research sites on allotment 03056 (Afton).	Management Direction: Establish research exclosures throughout multiple ecological sites within the Monument to monitor vegetation communities in ungrazed areas.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
51.	Management Direction: Cactus diversity is an important value in the Doña Ana Mountains ACEC. Closing of roads that facilitate illegal plant collecting is a planned action.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
52.	Management Direction: Potentially use herbicide treatments to modify vegetation in the Aden Lava Flow RNA and Kilbourne Hole NNL.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
53.	Management Direction: The existing vegetation sale areas will be retained until the supply of plants is exhausted. Sale areas will then be expanded into adjacent lands identified for disposal. A new sale area will be located between Deming and Lordsburg.	Management Direction: Close the Monument to commercial plant collecting and recreational live plant collecting. Allow recreational plant collecting of plant material (plant parts) for noncommercial purposes. Retain plant and seed collecting authority for administrative purposes (for example, Seeds of Success).	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
54.	Management Direction: No similar management direction.	Management Direction: Surface-disturbing activities are not permitted in suitable special status plant species habitat (117,229 acres).	Management Direction: Establish no-surface-disturbance buffers around known occupied habitat for special status plant species (167 acres). BLM will work with universities and other research partners (for example, US Geological Survey) to develop habitat models for rare and special status plants within the Monument to inform avoidance areas and enable habitat protection for rare and special status plants.	Management Direction: No similar management direction.
55.	Management Direction: Grass bottomlands, mixed desert shrub (<10 percent slope), snakeweed, and mountain brush type will be treated using combinations of prescribed burning, prescribed natural fire, and prescribed grazing management. Creosotebush, mesquite, and desert shrub (<19 percent slope) will be treated almost entirely by the use of chemical herbicides. Areas over 10 percent slope and within one-half mile of a perennial stream will not be treated chemically. All areas treated by prescribed burning, prescribed natural fire, or chemical herbicides would be rested from grazing for at least two growing seasons in areas where livestock use occurs, unless otherwise authorized.	Management Direction: Manage vegetation communities and areas needing restoration using active and passive methods such as evaluating AMPs to meet the ecological site potential, natural community, or reference ecological state. Passive methods allow the vegetation resource to naturally regenerate over time without taking direct action.	Management Direction: Manage vegetation communities and areas needing restoration using passive and active treatments to increase native vegetation to the capability of the site (degree to which the kind, proportions, and amounts of plants in the ecological community resemble the potential natural community based on the area's disturbance history). Active methods include activities designed to enhance or improve the vegetation resource, including mechanical, cultural, biological, or chemical restoration practices.	Management Direction: Same as Alternative C.
56.	Management Direction: Grazing systems will be developed using forage utilization criteria for important forage species as outlined in Appendix D-3. Flexibility will be provided for permittees and lessees to deviate from these criteria where specified in allotment-specific plans which prescribe different use levels or different means of evaluating allotment objectives.	Management Direction: Grazing management systems will be developed using forage utilization criteria for important forage species and available water sources. Flexibility will be provided for permittees and lessees to deviate from these criteria where specified in allotment-specific plans that prescribe different use levels or different means of evaluating allotment objectives.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
57.	Management Direction: Allotments within Special Management Areas or riparian zones will receive a higher priority for AMP development due to possible resource conflicts.	Management Direction: Grazing allotments overlapping with special designations, riparian areas, or springs and seeps will receive a higher priority for AMP development due to possible resource conflicts.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
58.	Management Direction: No similar management direction.	Management Direction: Cooperate with appropriate agencies to eradicate or control invasive species.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
59.	Management Direction: No similar management direction.	Management Direction: Restrict new land uses and, where possible, modify existing land uses in riparian habitats to achieve proper functioning conditions, while restoring and protecting riparian and aquatic ecosystems and restoring plant community structure and composition to meet site potential or site capability.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
60.	Management Direction: No similar management direction.	Management Direction: Conduct vegetation treatments to maintain or enhance the grassland component of upland habitat with the objective of obtaining reference plant communities.	Management Direction: Conduct vegetation treatments to maintain or enhance the grassland component of upland habitat to ensure adequate foliar diversity, cover, and nesting structure to meet habitat needs for grassland birds, including Aplomado falcon.	Management Direction: Conduct vegetation treatments to maintain the grassland component of upland habitat with the objective of meeting land capability.
61.	Management Direction: No similar management direction	Management Direction: Stabilize soils on both site-specific areas and a watershed basis by maintaining an appropriate percentage of vegetation cover, protective litter, and rock cover and by minimizing surface disturbance.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
62.	Management Direction: No similar management direction.	Management Direction: Evaluate land health at the watershed level using ecological site descriptions, interpreting indicators of rangeland health (IIRH), long-term monitoring data, and Assessment, Inventory, and Monitoring (AIM) data. Establish benchmarks so that land health standards can be evaluated using available data in addition to IIRH.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
63.	Management Direction: Watershed management plans will be developed for the Uvas Valley.	Management Direction: Initiate, support, or participate in watershed-level planning and future studies that could include writing comprehensive watershed management plans based on both the watershed boundary and drainage basin boundary, providing a framework to protect, enhance and restore watershed health that promotes and mimics the natural hydrological processes within the watershed.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
64.	Management Direction: No similar management direction.	Management Direction: Conduct vegetation treatments to increase infiltration and address hydrologic function and biotic integrity based on vegetation type, soil type, and landform. Prioritize areas identified as at risk of ecological state transition based on land health assessments.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
65.	Management Direction: No similar management direction.	Management Direction: Address structure, composition, and plant functional groups, as detailed in ecological site descriptions, using best available science and appropriate methods (for example, brush control, prescribed grazing, and/or prescribed fire).	Management Direction: Same as Alternative B.	Management Direction: Address structure, composition, and plant functional groups with an emphasis on grasslands, as detailed in ecological site descriptions, using best available science and appropriate methods (for example, brush control, prescribed grazing, and/or prescribed fire).
66.	Management Direction: No similar management direction.	Management Direction: Monitor impacts of activities and climate change on plant communities and individual endemic plant species.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Wildland Fire Ecology and Management			
67.	Goals: <ul style="list-style-type: none"> • Reduce the risk to human life and property from wildland fire. • Reduce the risk and cost of fire suppression in areas of hazardous fuels buildup. • Improve landscape health by returning fire to its natural role in the ecosystem. 			
68.	Objective: No similar objective.	Objective: Protect, restore, and maintain the ecological integrity of native biological communities by using prescribed fire (planned ignitions), wildfire (unplanned ignitions), and mechanical and chemical treatment methods to support a diversity of wildlife on fire-adapted landscapes occurring on and near the Monument.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
69.	Objective: No similar objective.	Objective: Develop a district-wide Fire Management Plan that covers the Monument planning area.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
70.	Objective: No similar objective.	Objective: Maintain active fire prevention and educate the public to reduce the threat of human caused fire ignitions.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
71.	Objective: No similar objective.	Objective: If a natural ignition occurs, consider managing the fire for multiple objectives.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
72.	Objective: No similar objective.	Objective: Utilize best management practices to prevent introduction of invasive plant species during fuels treatments.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
73.	Management Direction: Focus treatments on improving landscape health through treating lands in Fire Regime Condition Classes 2 and 3. Maintain Fire Regime Condition Class 1. The Desired Future Condition of the landscape is Fire Regime Condition Class 1. This direction applies to threatened and endangered species, as well as cultural resources and other resources that could be affected by wildland fire suppression and fire and fuels management. This direction would be followed unless doing so would compromise protection of human life or property or the protection of special species habitat.	Management Direction: Utilize ecological site descriptions and best available science to focus fuels treatments.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
74.	Management Direction: Focus treatments on communities and surrounding areas with the potential for escaped fire or loss of life or property. Focus treatments on public land within the 18 wildland/urban interface (WUI) areas defined in cooperating with the New Mexico State Forestry Division (2003) and on other areas where public land is adjacent to communities.	Management Direction: Focus treatments on communities and surrounding areas with the potential for escaped fire or loss of life or property. Focus treatments on areas identified as containing hazardous fuels buildup to reduce the risk and cost of fire suppression.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
75.	Management Direction: No similar management direction.	Management Direction: Continue implementing prescribed fire or other fuels reduction treatments in Dripping Springs to reduce public safety risks from wildfire. Identify other recreation areas where prescribed fire or other fuels reduction treatments should be implemented for public safety.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
76.	Management Direction: Focus appropriate treatments on areas identified as containing hazardous fuels buildup, to reduce the risk and cost of fire suppression.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
	Geological Resources			
77.	Goals: <ul style="list-style-type: none"> Manage to protect the unique geological features and objects in the Monument 			
78.	Objective: No similar objective.	Objective: Promote research of unique geological features to understand the intrinsic characteristics and relationship to the landscape and resources.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
79.	Objective: No similar objective.	Objective: Manage uses to prevent damage to unique geological features and geomorphologic features (small-scale expressions of geological processes).	Objective: Same as Alternative B.	Objective: Same as Alternative B.
80.	Objective: No similar objective.	Objective: Increase public education and appreciation of geological resources through interpretation.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
81.	Management Direction: The decision area is appropriated and withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition under the public land laws, including withdrawal 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.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
82.	Management Direction: No similar management direction.	Management Direction: Promote development of a 1:24,000 or finer geological map for the Monument.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
83.	Management Direction: No similar management direction.	Management Direction: Reroute existing or site new routes and trails to avoid damage to unique geological features.	Management Direction: Where the opportunity exists (for example, adequate funding and an ability to update without causing negative impacts on other resources), reroute existing or site new routes and trails to avoid damage to unique geological features.	Management Direction: Same as Alternative C.
84.	Management Direction: No similar management direction.	Management Direction: Establish and maintain a geological resource teaching collection for public outreach and education.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
85.	Management Direction: No similar management direction.	Management Direction: Develop a kindergarten–grade 12 geological resources curriculum, in partnership with local school districts, in accordance with state and national standards.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
86.	Management Direction: No similar management direction.	Management Direction: Support the development of geological resources exhibits for venues in Doña Ana County and beyond.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Paleontological Resources			
87.	Goals: <ul style="list-style-type: none"> Identify, study, interpret, and protect unique and important paleontological resources and values in the Monument while allowing for scientific research. 			
88.	Objective: Manage and protect paleontological resources that occur on BLM-administered land.	Objective: No similar objective.	Objective: No similar objective.	Objective: No similar objective.
89.	Objective: No similar objective.	Objective: Continue to inventory for paleontological resources and evaluate their significance for protection, conservation, research, or interpretation.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
90.	Objective: No similar objective.	Objective: Preserve paleontological resources and protect them from destruction or degradation. This also applies to materials from public lands located in museum collections.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
91.	Objective: No similar objective.	Objective: Facilitate appropriate paleontological research to improve understanding of paleontological resources.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
92.	Objective: No similar objective.	Objective: Increase public education and appreciation of paleontological resources through interpretation and dissemination of research.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
93.	Management Direction: No similar management direction.	Management Direction: Develop and maintain a database of fossil localities that could be drawn upon for researchers.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
94.	Management Direction: No similar management direction.	Management Direction: Develop a Comprehensive Paleontological Resources Activity Plan within 5 years of the signing of the OMDPNM RMP Record of Decision, including protocols for inventory, collection, monitoring, and education and outreach.	Management Direction: Develop a paleontological resources monitoring activity plan within 5 years of the signing of the OMPDNM RMP Record of Decision that will establish baseline conditions of paleontological resources and track changes to those resources based on management, research, and other factors (such as weathering).	Management Direction: Same as Alternative C.
95.	Management Direction: No similar management direction.	Management Direction: Establish and maintain a paleontological resource teaching collection for public outreach and education.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
96.	Management Direction: No similar management direction.	Management Direction: Develop a kindergarten–grade 12 paleontological curriculum, in partnership with local school districts, in accordance with state and national standards.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
97.	Management Direction: No similar management direction.	Management Direction: Support the development of paleontological exhibits for venues in Doña Ana County and beyond.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
98.	Management Direction: Prohibit casual collection of common non-vertebrate and plant fossils and ichnofossils, including petrified wood, throughout the Monument.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
99.	Management Direction: No similar management direction.	Management Direction: Reroute existing or site new routes and trails to avoid scientifically important paleontological resources.	Management Direction: Where the opportunity exists, reroute existing or site new routes and trails to avoid scientifically important paleontological resources.	Management Direction: Same as Alternative C.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
100.	Management Direction: No similar management direction.	Management Direction: To facilitate the protection, storage, and preservation of fossils discovered or collected on BLM land, continue to work cooperatively with museums to collect and curate important material to the standards outlined in Department of the Interior Departmental Manual 411.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
	Soil Resources			
101.	Goals: <ul style="list-style-type: none"> Maintain, stabilize, and enhance natural watershed function and ecosystem characteristics. Ecological sites are in a productive and sustainable condition. Soils are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The kind, amount, and/or pattern of vegetation provide protection on a given site to minimize erosion and assist in meeting State and Tribal water quality standards. 			
102.	Objective: No similar objective.	Objective: Protect and restore soil and hydrological conditions on both site-specific areas and a watershed basis maintaining, improving, stabilizing, and restoring overall watershed health and function, which meets the ecological site capabilities in a manner that promotes natural hydrological processes and natural resources.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
103.	Objective: No similar objective.	Objective: Control soil erosion, sediment movement, and salt contamination of surface water to maintain, improve, and restore overall watershed health.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
104.	Objective: No similar objective.	Objective: Maintain, improve, and protect areas of biological soil crust appropriate for the soil type, climate, and landform.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
105.	Objective: No similar objective.	Objective: Protect soils with a silt content of 30 percent or higher from degradation and remediate where degradation has occurred.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
106.	Objective: No similar objective.	Objective: Ensure soils exhibit infiltration, permeability, and erosion rates appropriate for the soil type, climate, and landform.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
107.	Objective: No similar objective.	Objective: Maintain or enhance soil stability, productivity, and infiltration to prevent accelerated erosion and to provide for optimal plant growth and the site's potential.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
108.	Objective: No similar objective.	Objective: Maintain, improve, and restore overall watershed health and promote climate resiliency by meeting or moving toward the riparian and upland land health standards, as well as the site characteristics, plant communities, and site interpretations identified in ecological site descriptions and standard habitat sites.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
109.	Management Direction: No similar management direction.	Management Direction: The soils on both site-specific areas and a watershed basis would be stabilized by maintaining appropriate percentage of vegetation cover and protective litter and rock cover and by minimizing surface disturbance.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
110.	Management Direction: No similar management direction.	Management Direction: Evaluate land health at the watershed level using ecological site descriptions, IIRH, long-term monitoring data, and AIM data. Establish benchmarks so that land health standards can be evaluated using available data in addition to IIRH.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
111.	Management Direction: Critical soils on 0-10 percent slopes will be the first priority for land treatments and grazing management to reduce erosion and improve water quality.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
112.	Management Direction: Critical soils on slopes over 10 percent will be a priority for grazing management to reduce erosion and improve water quality.	Management Direction: Soils on slopes over 10 percent will be a priority for grazing management to reduce erosion and improve water quality.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
113.	Management Direction: Watershed management plans will be developed for the Uvas Valley.	Management Direction: Watershed-level planning and future studies could include analysis of groundwater resources and how different factors (climate, population growth, increased infrastructure, or change in grazing) might influence water availability and soil erosion.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
114.	Management Direction: Provision for erosion control will continue to be incorporated into all surface-disturbing activities.	Management Direction: Provisions and design features for erosion control will continue to be incorporated into all surface-disturbing activities.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
115.	Management Direction: Continue to participate in the National Cooperative Soil Survey Program. Updating of the soil surveys and soil interpretive data will be used in planning, support, and implementation of resource activities.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
116.	Management Direction: Emphasis is placed on prevention of deterioration or degradation as well as conservation of the soil resource.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
117.	Management Direction: All lands in soil capability classes II through VIII are not suitable for desert land entry petition application.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
118.	Management Direction: No similar management direction.	Management Direction: Conduct inventories for biological soil crusts in the Monument.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
119.	Management Direction: No similar management direction.	Management Direction: Update the soil survey for the Monument to develop detailed soil map units and ecological site descriptions.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
120.	Management Direction: No similar management direction.	Management Direction: Further analysis and design and mitigation measures may be warranted for soils with a silt content of 30 percent or higher.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
121.	Management Direction: Fragile land areas will receive high priority for allotment management plan and other activity plan revision or development, allotment monitoring, land treatments, allotment recategorization, and possible reduction or exclusion of surface-disturbing activities, including range improvement development and livestock grazing use.	Management Direction: When information becomes available, define and map fragile soils, which will receive high priority for coordination with allotment permittees on revised grazing management, allotment management plan and other activity plan revision or development, allotment monitoring, land treatments, allotment recategorization, and possible reduction or exclusion of surface-disturbing activities, including range improvement development and livestock grazing use.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
	Cave and Karst Resources			
122.	Goal: <ul style="list-style-type: none"> Inventory, protect, and conserve cave and karst resources as they are discovered on public lands. 			
123.	Objective: No similar objective.	Objective: Minimize transmission of white-nose syndrome.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
124.	Objective: No similar objective.	Objective: Manage cave and karst resources in concert with other resource values, including, but not limited to, cultural and paleontological resources, springs, and wildlife.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
125.	Management Direction: An inventory of cave resources will be conducted, and caves will be managed in accordance with the Federal Cave Resources Protection Act of 1988 and related BLM policy. Significant cave locations will not be made public, and any actions which could adversely affect significant caves will be deferred or denied. BLM will take appropriate protection measures as needed.	Management Direction: An inventory of cave resources will be conducted, including assessing the presence of or suitable conditions for <i>Pseudogymnoascus destructans</i> , which causes white-nose syndrome.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
126.	Management Direction: No similar management direction.	Management Direction: All caves on the Monument with suitable bat habitat are closed to non-permitted use, with the exception of traditional Tribal use.	Management Direction: Any actions that could adversely affect significant caves will be deferred or denied. BLM will take appropriate protection measures as needed.	Management Direction: Same as Alternative C.
127.	Management Direction: No similar management direction.	Management Direction: Manage caves as significant until an evaluation is completed.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
128.	Management Direction: No similar management direction.	Management Direction: Develop and implement educational materials about white-nose syndrome decontamination and the importance of caves from a cultural and paleontological standpoint.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
129.	Management Direction: No similar management direction.	Management Direction: Promote cave research in accordance with the Monument science plan.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
130.	Management Direction: No similar management direction.	Management Direction: Conduct pedestrian surveys for suspected high karst areas and implement appropriate management where these areas are identified.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Water Resources			
131.	Goals: <ul style="list-style-type: none"> Maintain, stabilize, and enhance natural watershed function and ecosystem characteristics. Ensure naturally occurring precipitation is dispersed among a healthy and functioning watershed to sustain and manage ecological resources and meet EPA-approved applicable water quality standards. Ecological sites are in a productive and sustainable condition. Soils are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The kind, amount, and/or pattern of vegetation provide protection on a given site to minimize erosion and assist in meeting State and Tribal water quality standards. 			
132.	Objective: Emphasize water rights and watershed management specifically related to water quality and sediment yields.	Objective: Meet or move toward riparian and upland land health standards to protect and restore watershed functionality and resiliency associated with stream type to mitigate nonpoint source pollution impacts to receiving streams outside the Monument, improve soil characteristics to increase infiltration, reduce runoff, and promote desired vegetative communities.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
133.	Objective: No similar objective.	Objective: Assess soil and water resources and use best available science to develop projects that enhance water retention and infiltration on the Monument, while minimizing soil movement and loss.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
134.	Objective: No similar objective.	Objective: Support effective management and maintenance of flood control structures, gradient control structures, and/or similar structures on the Monument while maintaining or improving characteristics associated with the stream type.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
135.	Management Direction: Nonpoint source impaired watersheds and areas with critical to severe erosion (1.0 to greater than 3.0 acres ft/mi ² /yr) sediment yields, which produce runoff having more than 1,000 milligrams per liter (mg/l) dissolved salts, will be of major focus.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
136.	Management Direction: Continuing efforts to control erosion will include the following: minimizing surface disturbance from construction projects, closure and rehabilitation of unneeded roads, and control of OHV use in critical areas.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
137.	Management Direction: Watershed management plans will be developed for the Uvas Valley.	Management Direction: Initiate, support, or participate in watershed-level planning and future studies that could include writing comprehensive watershed management plans based on both the watershed boundary and drainage basin boundary, providing a framework to protect, enhance and restore watershed health that promotes and mimics the natural hydrological processes within the watershed.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
138.	Management Direction: No similar management direction.	Management Direction: Where feasible, convert existing flood/sediment control structures to natural channel gradient control features and bank-full floodplains, allowing sediment deposition and flood flow moderation. Restore natural stream channel transport and deposition zones based on desired stream channel geomorphology (stream type).	Management Direction: Provide access and staging areas as needed for management and maintenance of flood control structures, gradient control structures, and/or similar structures on the Monument, while protecting other resources.	Management Direction: Same as Alternative C.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
139.	Management Direction: No similar management direction.	Management Direction: Prioritize areas for upland vegetation treatments based on land health assessments, proper functioning condition (PFC) assessments, and indicators of rangeland health. Implement upland vegetation treatments to improve infiltration, reduce surface runoff/sediment transport, and maintain/restore biologic integrity to promote sediment transport to stream channels in balance with the desired stream type with the goal of promoting natural stream channel form/function.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
140.	Management Direction: No similar management direction.	Management Direction: Evaluate land health at the watershed level using Ecological Site Descriptions, IIRH, long-term monitoring data, and AIM data. Establish benchmarks so that land health standards can be evaluated using available data in addition to IIRH.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
141.	Management Direction: No similar management direction.	Management Direction: In priority watersheds, inventory and assess man-made structures, such as earthen structures, roads, and ROWs, and maintain, improve, or rehabilitate to reduce erosion based on the results of the inventory.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
Air Quality and Climate				
142.	Goal: <ul style="list-style-type: none"> Preserve, protect, and maintain air quality and air resource-related values consistent with public health and welfare on public land in the Monument. 			
143.	Objective: Protect, maintain, and enhance air quality on public land.	Objective: No similar objective.	Objective: No similar objective.	Objective: No similar objective.
144.	Objective: No similar objective.	Objective: Manage activities on public land, including those with National Landscape Conservation System (NLCS) designation, to maintain air quality consistent with the Clean Air Act, as amended, and FLPMA.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
145.	Objective: No similar objective.	Objective: Manage public land activities consistent with at least the Federal Class II area standards and visibility (regional haze) criteria, and no less than any local governments' air quality criteria.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
146.	Objective: No similar objective.	Objective: Maintain concentrations of criteria pollutants in compliance with applicable State and Federal ambient air quality standards within the scope of BLM authority.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
147.	Management Direction: Air quality management will focus in ACECs, and air quality protection will continue to be incorporated into all surface-disturbing activities.	Management Direction: Air quality protection consistent with the Clean Air Act, as amended, will be incorporated into all surface-disturbing activities within the Monument.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
148.	Management Direction: Manage the Organ/Franklin ACEC as Class II Air Quality.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
149.	Management Direction: Reduce air quality impacts from activities on public land through mitigation measures developed on a case-by-case basis through NEPA or other statutory or regulatory processes. Evaluate each impact to see if it is allowable and acceptable. Activities such as road construction and sand or gravel extraction will have appropriate measures developed to mitigate impacts to air quality (such as dust abatement.). These measures will be made a part of the permit or contract.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
150.	Management Direction: No similar management direction.	Management Direction: Further analysis of air resources may be required before authorizing activities in the Monument to ensure compliance with the Clean Air Act Prevention of Significant Deterioration program and the Wilderness Act.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
151.	Management Direction: No similar management direction.	Management Direction: Land managers have the responsibility to review permit applications for new or modified pollution sources to determine whether pollution sources would cause exceedances of national ambient air quality standards or impact air quality related values. including visibility, scenic, cultural, physical, or ecological resources in the Monument.	Management Direction: Land managers may review permit applications for new or modified pollution sources to determine whether pollution sources would cause exceedances of national ambient air quality standards or impact air quality related values. including visibility, scenic, cultural, physical, or ecological resources in the Monument.	Management Direction: No similar management direction.
152.	Management Direction: No similar management direction.	Management Direction: Prevent and reduce air quality impacts from all BLM-authorized activities on public land by implementing mitigation measures developed on a case-by-case basis.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
Cultural Resources				
153.	Goals <ul style="list-style-type: none"> • Manage cultural resources to ensure their protection and preservation for the benefit of future generations and descendant communities. • Identify opportunities to enhance or interpret cultural resources for public benefit and scientific research. 			
154.	Objective: Manage cultural resources on public land in a manner that protects and provides for their proper use.	Objective: Same as Alternative A.	Objective: Same as Alternative A.	Objective: Same as Alternative A.
155.	Objective: Protect and preserve in place representative examples of the full array of cultural resources on public land for the benefit of scientific and public use by present and future generations.	Objective: Promote scientific and scholarly research of cultural resources of the Monument. Research that may help to inform better management practices and/or benefit descendant communities should be prioritized.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
156.	Objective: Ensure that proposed land uses, initiated or authorized by the BLM, avoid inadvertent damage to federal and nonfederal cultural resources (BLM Manual 8100.02, Cultural Resource Management).	Objective: Ensure that proposed land uses, initiated or authorized by the BLM, avoid adverse impacts on federal and nonfederal cultural resources (BLM Manual 8100.02, Cultural Resource Management).	Objective: Same as Alternative B.	Objective: Same as Alternative B.
157.	Objective: No similar objective.	Objective: Identify, record, and evaluate cultural resources within the Monument. Prioritize areas prone to impacts stemming from recreational use for cultural resource inventory.	Objective: Same as Alternative B.	Objective: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
158.	Objective: No similar objective.	Objective: Conduct consultation with Native American Tribes and Pueblos to identify traditional cultural properties (TCPs), sacred sites, and other traditional use areas within the Monument and ensure that they are adequately protected and managed.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
159.	Objective: No similar objective.	Objective: Ensure that Native American Tribes have access to their traditional use areas, sacred sites, and other areas of cultural significance.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
160.	Objective: No similar objective.	Objective: Manage and monitor significant archaeological sites that are prone to natural and anthropogenic impacts. Impacts to sites that would result in the loss of integrity should be reduced, mitigated, and prevented.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
161.	Objective: No similar objective.	Objective: Educate the general public about proper site etiquette and stewardship related to cultural resources.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
162.	Management Direction: Designate two ACECs to protect archaeological sites in conjunction with managing their primary biological and scenic values: (1) Doña Ana Mountains, and (2) Organ/Franklin Mountains.	Management Direction: Manage two ACECs to protect archaeological sites in conjunction with managing their primary biological and scenic values: 1) Doña Ana Mountains, and 2) Organ/Franklin Mountains.	Management Direction: Same as Alternative B.	Management Direction: No similar action.
163.	Management Direction: Manage the Butterfield Overland NHT to maintain its integrity in lieu of specific guidance from the Department of the Interior and/or Congress on how the trail will be managed as a NHT.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
164.	Management Direction: No similar management direction.	Management Direction: Develop interpretive educational materials for the Butterfield Overland NHT.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
165.	Management Direction: Dripping Springs Natural Area is closed to grazing to protect cultural resources.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
166.	Management Direction: The BLM consults with the New Mexico State Historic Preservation Officer (SHPO) and Tribes for any new ground-disturbing activities associated with livestock grazing.	Management Direction: Continue to consult with the New Mexico SHPO and Tribes on any Section 106 undertaking, including livestock grazing that may have the potential to affect cultural resources and Tribal interests.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
167.	Management Direction: The BLM consults with the New Mexico SHPO and Tribes for federal undertakings that may affect their interests.	Management Direction: Continue to consult with the New Mexico SHPO and Tribes on any Section 106 undertaking, including livestock grazing that may have the potential to affect cultural resources and Tribal interests.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
168.	Management Direction: Acquire land around Picacho Peak next to the Butterfield Overland NHT.	Management Direction: Acquire segments of the Butterfield Overland NHT within the Monument.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
169.	Management Direction: No similar management direction.	Management Direction: Prohibit surface-disturbing activities within 1 mile on either side of the Butterfield Overland NHT.	Management Direction: Prohibit surface-disturbing activities within one-half mile on either side of the Butterfield Overland NHT.	Management Direction: Prohibit surface-disturbing activities within one-fourth mile on either side of the Butterfield Overland NHT.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
170.	Management Direction: No similar management direction.	Management Direction: Conduct a viewshed analysis for any surface-disturbing activity within 3 miles on either side of the Butterfield Overland and El Camino Real de Tierra Adentro NHTs for the purpose of identifying and evaluating potential impacts on the NHTs, their associated historic landscapes, and their associated historic features. Subject to the viewshed analysis, reasonable mitigation measures may be required. These may include, but are not limited to, modification of siting or design of visible features to camouflage or otherwise hide the proposed features within the viewshed.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
171.	Management Direction: Perform a non-project-related survey and analysis of cultural and heritage resources that is greater than generally performed across the BLM district to meet the requirements to identify resources for research or public interpretation.	Management Direction: Perform proactive cultural resource surveys to identify resources for research or public interpretation and to help inform management practices with better cultural resource data.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
172.	Management Direction: Maintain a cumulative site inventory documenting the locations of all known sites, all areas surveyed, and areas known to be devoid of cultural resources.	Management Direction: Maintain a cultural resource database that documents the locations of all known sites, all areas surveyed, and areas known to be devoid of cultural resources.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
173.	Management Direction: Protection of cultural resources is accomplished through the application of both administrative (such as OHV closure) and physical measures (such as fencing) as necessitated by the cultural resource’s scientific and socio-cultural value, vulnerability, and degree of threat. Interim protection focuses primarily on the patrol and surveillance plan, until specific cultural resource management objectives are developed. An active program of signing cultural resource properties under threat of active or potential vandalism will continue.	Management Direction: Accomplish protection of cultural resources through the application of both administrative (including, but not limited to, OHV closure) and physical (including, but not limited to, sign postage) measures as necessitated by the cultural resource’s scientific and socio-cultural value, vulnerability, and degree of threat. A site monitoring program involving both BLM staff and members of the public will aid in assessing the condition of vulnerable significant sites and whether further management protections are needed for the resource.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
174.	Management Direction: No similar management direction.	Management Direction: Seek to collaborate with Native American Tribes and other partners for developing educational and interpretive materials and programs about cultural resources and site etiquette for the general public.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
175.	Management Direction: No similar management direction.	Management Direction: Produce educational and interpretive materials and programs about cultural resources and site etiquette for the general public.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
176.	Management Direction: No similar management direction.	Management Direction: Prohibit recreational use of domestic pets and pack animals in cultural resource locations listed or eligible for listing on the National Register of Historic Places, with the exception of historic roads and trails.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
177.	Management Direction: No similar management direction.	Management Direction: Work with visitors, organizations, and SRP/SUP holders to educate users about the sensitivity and fragility of cultural resources.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
178.	Management Direction: No similar management direction.	Management Direction: Implement permanent or temporary closures to recreation activities in areas with sensitive cultural resources, such as certain climbing areas.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
	Visual Resources			
179.	Goals: <ul style="list-style-type: none"> Manage public lands in a manner that would protect the quality of the visual (including scenic) values of these lands for present and future generations. 			
180.	Objective: Identify areas on public land that contain important visual values and manage those areas to maintain those visual values.	Objective: Define, identify, and manage areas on public land that contain important visual values.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
181.	Management Direction: Manage the Monument for the following VRM classes: <ul style="list-style-type: none"> VRM Class I: 241,070 acres VRM Class II: 41,099 acres VRM Class III: 25,735 acres VRM Class IV: 188,522 acres 	Management Direction: Manage the Monument for the following VRM classes: <ul style="list-style-type: none"> VRM Class I: 244,122 acres VRM Class II: 252,467 acres VRM Class III: 0 acres VRM Class IV: 0 acres 	Management Direction: Manage the Monument for the following VRM classes: <ul style="list-style-type: none"> Same as Alternative B. 	Management Direction: Manage the Monument for the following VRM classes: <ul style="list-style-type: none"> Same as Alternative B.
182.	Allocation for Allowable Resource Use: Manage the following areas as VRM Class I (Appendix A, Figure 2-1, Alternative A: Visual Resource Management): 241,070 acres. <ul style="list-style-type: none"> Scenic ACECs, including Doña Ana Mountains and Robledo Mountains Mountainous portions (generally above 5,000 feet) of the Organ/Franklin Mountains ACEC Aden Lava Flow RNA Wilderness areas 	Allocation for Allowable Resource Use: Manage the following areas as VRM Class I (Appendix A, Figure 2-2, Alternatives B, C, and D: Visual Resource Management): 244,122 acres. <ul style="list-style-type: none"> Wilderness areas Butterfield Overland NHT 	Allocation for Allowable Resource Use: Same as Alternative B.	Allocation for Allowable Resource Use: Same as Alternative B.
183.	Allocation for Allowable Resource Use: Manage the following areas as VRM Class II (Appendix A, Figure 2-1, Alternative A: Visual Resource Management): 41,099 acres. <ul style="list-style-type: none"> Some non-mountainous portions of the Organ/Franklin Mountains ACEC The section of Butterfield Overland NHT through the Monument Kilbourne Hole NNL 	Allocation for Allowable Resource Use: Manage all portions of the Monument not within VRM Class I areas as VRM Class II (Appendix A, Figure 2-2, Alternatives B, C, and D: Visual Resource Management): 252,467 acres.	Allocation for Allowable Resource Use: Same as Alternative B.	Allocation for Allowable Resource Use: Same as Alternative B.
184.	Allocation for Allowable Resource Use: Manage the following areas as VRM Class III (Appendix A, Figure 2-1, Alternative A: Visual Resource Management): 25,735 acres. <ul style="list-style-type: none"> Some non-mountainous portions of the Organ/Franklin Mountains ACEC 	Allocation for Allowable Resource Use: No similar allocation for allowable resource use.	Allocation for Allowable Resource Use: No similar allocation for allowable resource use.	Allocation for Allowable Resource Use: No similar allocation for allowable resource use.
185.	Allocation for Allowable Resource Use: Manage the following areas as VRM Class IV (Appendix A, Figure 2-1, Alternative A: Visual Resource Management): 188,522 acres. <ul style="list-style-type: none"> Some non-mountainous portions of the Organ/Franklin Mountains ACEC 	Allocation for Allowable Resource Use: No similar allocation for allowable resource use.	Allocation for Allowable Resource Use: No similar allocation for allowable resource use.	Allocation for Allowable Resource Use: No similar allocation for allowable resource use.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Livestock Grazing			
186.	<p>Goals:</p> <ul style="list-style-type: none"> Allow for sustainable grazing that maximizes traditional practices and contributes to the local economy while providing for functional rangeland ecosystem and the protection, preservation, and enhancement of the Monument resources, objects, and values. Manage livestock grazing in an efficient manner by providing effective allotment management. Maintain quality and quantity of key forage and browse species for use by livestock and wildlife through continued implementation of appropriate grazing systems and management practices. Monitor rangeland conditions and adapt grazing practices as necessary to ensure New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2001) are being achieved and to maintain or make progress toward long-term rangeland health. 			
187.	Objective: Manage the rangelands in an efficient manner by providing effective allotment management. This can be accomplished through careful planning, giving attention to proper placement of rangeland improvements, distribution of livestock, the kind and class of livestock, suitable grazing systems, assessing plant and animal requirements and vegetation treatments.	Objective: Manage the rangelands in an efficient and flexible manner by providing effective allotment management that includes maintaining existing/new rangeland improvements through farm bill programs, range betterment funds, or rancher funded projects to aid in distribution of livestock.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
188.	Objective: No similar objective.	Objective: Manage livestock grazing to avoid or minimize impacts on cultural resources and Tribal interests.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
189.	Objective: No similar objective.	Objective: Minimize conflicts between livestock grazing and recreational users.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
190.	Objective: No similar objective.	Objective: Implement rangeland improvements within allotments or priority watersheds to optimize livestock management consistent with multiple-use objectives and designed for the maintenance and improvement of ecological conditions.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
191.	Objective: No similar objective.	Objective: Based on monitoring data, make appropriate changes in grazing management necessary to ensure progress toward attainment of New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2001) and other multiple-use objectives. Changes in grazing management will be consistent with those guidelines and may include adjustments in permitted use levels, season of use, kind of livestock, allowable use levels, or stocking rates.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
192.	Objective: No similar objective.	Objective: Proactively consult, cooperate, and coordinate with grazing permittees and other agencies or entities when grazing is affected.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
193.	Allowable Use: In the Monument, 492,062 acres would be available for livestock grazing. The remaining 4,529 acres would be unavailable for standard term livestock grazing.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.
194.	Allowable Use: Dripping Springs Natural Area (991 acres) would be closed to grazing to protect cultural resources.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
195.	<p>Allowable Use: Grazing of domestic sheep and goats would be prohibited in currently occupied or potential bighorn sheep habitat areas of the Monument designated by the NMDGF.</p>	<p>Allowable Use: Grazing of domestic sheep and goats is prohibited in the Monument.</p>	<p>Allowable Use: Same as Alternative B.</p>	<p>Allowable Use: Same as Alternative A.</p>
196.	<p>Management Direction: Allotments will be managed for livestock grazing under the following categories:</p> <p>M – Maintain or improve existing situation (as described below):</p> <ul style="list-style-type: none"> • Present ecological and management condition is satisfactory • Moderate to high potential for vegetation production, and production is at or near potential • Limited or no conflicts exist with livestock grazing • Land status may or may not be considered • Positive return on investment exists <p>I – Improve existing resource conditions (as described below):</p> <ul style="list-style-type: none"> • Present ecological range condition is unsatisfactory with a downward trend • Present management practices are inadequate to meet long-term objectives • Vegetation production is producing at low to medium fair levels • Resource conflicts are evident with livestock grazing • Land status may or may not be considered • Positive economic returns exist on public investments <p>C – Custodial Management; prevention of deterioration of current resource conditions (as described below):</p> <ul style="list-style-type: none"> • Present ecological condition of range is variable • Vegetation production is relatively low • Limited potential for improvement • Limited or no conflicts exist with livestock grazing • No economic return on public investment is likely 	<p>Management Direction: Same as Alternative A.</p>	<p>Management Direction: Same as Alternative A.</p>	<p>Management Direction: Same as Alternative A.</p>
197.	<p>Management Direction: Allotment Management Plans and other activity plans will continue to be developed for allotments to resolve resource problems or conflicts. Each will be coordinated, consulted, and cooperated between permittees, other landowners, and affected interests. AMPs will normally include a grazing system, which will provide periodic rest from livestock grazing.</p>	<p>Management Direction: Same as Alternative A.</p>	<p>Management Direction: Same as Alternative A.</p>	<p>Management Direction: Same as Alternative A.</p>
198.	<p>Management Direction: Allotments with Special Management Areas or riparian zones will receive a higher priority for Allotment Management Plan development due to possible resource conflicts.</p>	<p>Management Direction: Allotments overlapping with special designations, riparian areas, or springs and seeps will receive a higher priority for Allotment Management Plan development due to possible resource conflicts.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
199.	Management Direction: Monitoring studies have been or will be established on all Category I allotments. Category I allotments are monitored at a greater intensity than Category M or C allotments. Any necessary adjustments in stocking levels or other management practices will be based on these studies and consultation with the permittee, other landowners, and affected interests. There will be no changes in active grazing preference until monitoring studies indicate a change is necessary or as agreed upon with the operator or as provided for in the grazing regulations.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
200.	Management Direction: Fragile land areas will receive high priority for Allotment Management Plan and other activity plan revision or development, allotment monitoring, land treatments, allotment recategorization, and possible reduction or exclusion of surface-disturbing activities, including range improvement development and livestock grazing use.	Management Direction: When information becomes available, fragile soils will be defined and mapped and will receive high priority for Allotment Management Plan and other activity plan revision or development, allotment monitoring, land treatments, allotment recategorization, and possible reduction or exclusion of surface-disturbing activities, including range improvement development and livestock grazing use.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
201.	Management Direction: It is intended that wildlife population goals can be reached without reduction of livestock numbers (through grazing management and land treatments.) Population goals may be revised as necessary through the HMP monitoring and evaluation process.	Management Direction: Conduct utilization monitoring, land health assessments, and indicators of rangeland health to ensure permitted AUMs will not lead to degradation of wildlife habitat and are compatible with restoring wildlife habitat.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
202.	Management Direction: No similar management direction.	Management Direction: Update existing non-wildlife-friendly fencing to BLM wildlife-friendly specifications throughout the Monument to promote wildlife movement. Remove unnecessary fencing to promote wildlife movement.	Management Direction: Where the opportunity exists (for example, adequate funding and ability to update without causing negative impacts on other resources), update existing non-wildlife-friendly fencing to BLM wildlife-friendly specifications to promote wildlife movement in known corridors. Where the opportunity exists, remove unnecessary fencing or update existing improvements, such as pasture fences, to be consistent with wildlife movement. Based on new information, ensure future improvements are consistent with wildlife movement.	Management Direction: No similar management direction.
203.	Management Direction: No similar management direction.	Management Direction: Soils on slopes over 10 percent will be a priority for grazing management to reduce erosion and improve water quality.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
204.	Management Direction: No similar management direction.	Management Direction: Accomplish efficient grazing management through careful planning, giving attention to proper placement of rangeland improvements, distribution of livestock, the kind and class of livestock, suitable grazing systems, plant and animal requirements, and vegetation treatments.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
205.	Management Direction: The BLM consults with New Mexico SHPO and Tribes for any new ground-disturbing activities associated with livestock grazing.	Management Direction: Continue to involve the New Mexico SHPO and consult with Tribes when livestock grazing may affect cultural resources and Tribal interests.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
206.	Management Direction: No similar management direction.	Management Direction: Evaluate the feasibility of authorizing grazing on allotments or portions of allotments when conflicts exist with site-specific issues and other resources.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
207.	Management Direction: No similar management direction.	Management Direction: Adaptively manage livestock grazing and set utilization rates at levels compatible with protecting Monument resources, objects, and values in the face of climate change/aridification.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
208.	Management Direction: The BLM partners with permittees, the Natural Resource Conservation Service, local governments, state agencies, and others to leverage resources and improve management flexibility.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
Minerals				
209.	Goals: <ul style="list-style-type: none"> Manage for the continued use of any existing leasable (including geothermal) and locatable mineral rights consistent with valid existing rights in a manner that considers protection of Monument objects. No new mineral exploration is allowed per the Proclamation. 			
210.	Objective: Presidential Proclamation 9131 (3 CFR 9131 [2014]) withdrew all federal lands and mineral estate from mineral entry, location, leasing, or sale; therefore, no new federal mineral leases or prospecting permits may be issued, and no new locatable mining claims may be staked.	Objective: Same as Alternative A.	Objective: Same as Alternative A.	Objective: Same as Alternative A.
211.	Objective: Presidential Proclamation 9131 (3 CFR 9131 [2014]) recognizes valid existing rights as pertaining to mineral entry, location, leasing, or sale.	Objective: Same as Alternative A.	Objective: Same as Alternative A.	Objective: Same as Alternative A.
212.	Allowable Use: Fluid Minerals - All federal lands and mineral estate in the Monument are closed to fluid mineral leasing (including geothermal leasing), subject to valid existing rights.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.
213.	Allowable Use: Salable Minerals - All federal lands and mineral estate in the Monument are closed to mineral material disposal, subject to valid existing rights.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.
214.	Allowable Use: Locatable Minerals – All federal lands and mineral estate in the Monument are withdrawn from locatable mineral entry, subject to valid existing rights.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.
215.	Allowable Use: Prohibit casual collection of mineral resources throughout the Monument (496,591 acres).	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.
216.	Allowable Use: Prohibit casual collection of petrified wood throughout the Monument (496,591 acres).	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.	Allowable Use: Same as Alternative A.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Recreation			
217.	<p>Goals:</p> <ul style="list-style-type: none"> Produce recreational opportunities that facilitate beneficial outcomes for visitors and community residents while protecting the monument’s values and increasing the public’s understanding of BLM’s multiple-use mission. Produce quality recreational opportunities that support the outdoor-oriented lifestyles and the quality of life of participants, which in turn can benefit local communities, regional economies, and the environment. During implementation-level planning (for example, integrated travel and transportation management plan and recreation area management plans) designate routes for motorized and mechanized use and identify other specific recreation management in SRMAs. 			
218.	<p>Objective: Recreation use is managed in order to protect the health and safety of visitors; to protect natural, cultural, and other resource values; to stimulate public enjoyment of public land and to resolve user conflicts.</p>	<p>Objective: Resource Protection - Increase awareness, understanding, and a sense of stewardship in recreation participants so their conduct safeguards cultural and natural resources as defined by area-specific land use plan objectives.</p> <p>Visitor Health and Safety - Ensure that visitors are not exposed to unhealthy or unsafe human-created conditions (defined by a repeat incident in the same year, of the same type, in the same location, due to the same cause).</p> <p>Use/User Conflict - Manage the recreation and visitor services program to achieve a minimum level of conflict to: (1) allow other resources/programs to achieve their resource management plan objectives, (2) curb illegal trespass and property damage, and (3) maintain a diversity of recreation activity participation.</p>	<p>Objective: Same as Alternative B.</p>	<p>Objective: Same as Alternative B.</p>
219.	<p>Designation: Designate the following SRMAs (Appendix A, Figure 2-5, Alternative A: Special Recreation Management Areas): 59,524 acres</p> <ul style="list-style-type: none"> Doña Ana Mountains SRMA Organ Mountains SRMA 	<p>Designation: Designate the following SRMAs (Appendix A, Figure 2-6, Alternative B: Special Recreation Management Areas): 66,348 acres</p> <ul style="list-style-type: none"> Doña Ana Mountains SRMA Organ Mountains SRMA Picacho Peak SRMA 	<p>Designation: Designate the following SRMAs (Appendix A, Figure 2-7, Alternative C: Special Recreation Management Areas): 45,871 acres</p> <ul style="list-style-type: none"> Doña Ana Mountains SRMA Organ Mountains SRMA Picacho Peak SRMA 	<p>Designation: Designate the following SRMAs (Appendix A, Figure 2-8, Alternative D: Special Recreation Management Areas): 7,284 acres</p> <ul style="list-style-type: none"> Doña Ana Mountains SRMA
220.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: Seek acquisition of legal public access in Picacho Peak SRMA.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: No similar management direction.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
221.	<p>Allowable Use: Doña Ana Mountains SRMA (7,284 acres):</p> <ul style="list-style-type: none"> Develop a recreation area management plan to guide recreational use in this SRMA. Any road or trail created by the passage of vehicles after this date will not be considered open and will be subject to closure. Manage for primitive and semi-primitive recreational opportunities. Manage for ROS semi-primitive nonmotorized, semi-primitive motorized, and roaded natural classes. 	<p>Allowable Use: Doña Ana Mountains SRMA (7,283 acres):</p> <ul style="list-style-type: none"> Develop a climbing management plan for the entire SRMA. Northern Doña Ana Mountains Recreation Management Zone (RMZ; 4,797 acres) <ul style="list-style-type: none"> OHV designation – closed Prohibit recreational shooting Manage to avoid conflicts between mechanized (bicycle), equestrian, and pedestrian use Southern Doña Ana Mountains RMZ (2,486 acres) <ul style="list-style-type: none"> Prohibit recreational shooting Manage to avoid conflicts between OHV, mechanized (bicycle), equestrian, and pedestrian use 	<p>Allowable Use: Doña Ana Mountains SRMA (5,858 acres):</p> <ul style="list-style-type: none"> Develop a climbing management plan for the entire SRMA. Northern Doña Ana Mountains RMZ (3,054 acres) <ul style="list-style-type: none"> OHV designation – closed Recreational shooting allowed in BLM designated areas only¹ Southern Doña Ana Mountains RMZ (2,804 acres) <ul style="list-style-type: none"> Prohibit recreational shooting Manage to avoid conflicts between OHV, mechanized (bicycle), equestrian, and pedestrian use 	<p>Allowable Use: Doña Ana Mountains SRMA (7,284 acres):</p> <ul style="list-style-type: none"> Northern Doña Ana Mountains RMZ (4,166 acres) <ul style="list-style-type: none"> OHV designation – limited to designated roads Southern Doña Ana Mountains RMZ (3,118 acres) <ul style="list-style-type: none"> Prohibit recreational shooting
222.	<p>Allowable Use: Organ Mountains SRMA (52,240 acres): Manage in accordance with the Organ Mountains Coordinated Resource Management Plan, including, but not limited to:</p> <ul style="list-style-type: none"> Minimize conflicts with adjacent private landowners and Fort Bliss. Minimize conflicts between recreation user groups. Minimize conflicts with other resources and uses. Provide for visitor safety and interpretive needs. Provide for quality developed recreation needs and demands in a manner compatible with other uses. Provide for quality primitive and semi-primitive recreation needs and demands in a manner compatible with other uses. Establish designated trails to minimize human impacts within State-listed or threatened and endangered plant areas (route trails to the side or outside of riparian areas). Prohibit overnight camping in back-country areas within riparian zones. Continue to manage the Aguirre Spring Campground as an overnight facility. Fence the Aguirre Spring Campground to correspond with the existing 1/4-mile safety/no-shooting restriction. Manage the entire Cox Ranch area (including the La Cueva picnic area, A. B. Cox Visitor Center, and Dripping Springs ruins) as a day-use area. Fence the entire La Cueva/Cox Ranch picnic/day-camp area, parking area, and visitor center 	<p>Allowable Use: Organ Mountains SRMA (55,710 acres): Same as Alternative A, plus:</p> <ul style="list-style-type: none"> Organ Mountains Wilderness (35,335 acres) <ul style="list-style-type: none"> Manage recreation in the Organ Mountains Wilderness in a manner that ensures that wilderness character is preserved and is unimpaired for future use and enjoyment. OHV Designation – Closed Mechanized use – Closed Develop a climbing plan to limit climbing and bouldering within cultural, biological, and geological resource areas. Prepare a Wilderness Management Plan to address potential resource conflicts. Non-wilderness portions of the Organ Mountains SRMA (20,375 acres) <ul style="list-style-type: none"> Manage for existing mechanized and non-mechanized recreational use. OHV Designation - Closed 	<p>Allowable Use: Organ Mountains SRMA (36,658 acres):</p> <ul style="list-style-type: none"> OHV Designation – Limited to designated roads Mechanized use – Limited to designated roads and trails 	<p>Allowable Use: Undesignate the Organ Mountains SRMA.</p>

¹ For land use allocation and RMP conformance purposes. The BLM LCDO shall designate and conduct the appropriate environmental impacts analysis for recreational shooting area(s) within the Northern Doña Ana Mountains RMZ during development of the recreation area management plan for the Doña Ana Mountains SRMA. No BLM designated recreational shooting area located in the Northern Doña Ana Mountains SRMA RMZ shall exceed 40 acres total. At this point, the BLM has not completed a recreation area management plan, but the agency anticipates this acreage would be adequate to encompass a shooting range, parking lot, and safety buffer.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
222. (cont.)	<p>complex to exclude livestock and delineate the boundaries of the area for safety/no-shooting and other restrictions (1/4-mile zone).</p> <ul style="list-style-type: none"> • Manage the area known as Soledad Rock Garden and Ecology Site for scientific, educational, and interpretive purposes (tied in with the developments and cooperative agreement between BLM, city, county, etc. proposed for the Cox property). Because of the proximity to a developing residential area, the protection and management of this area will be a high priority. Facilities will include a designated parking area, hiking trail system, and signing. Climbing activities will be specifically prohibited. • Limit vehicle use to designated roads and trails within the Coordinated Resource Management Plan area. • Confine all pets to leashes within designated campgrounds and on designated trails. Pets will be under the control of the owner at all times. • Limit the maximum camping stay limit will be 7 days within any period of 28 consecutive days anywhere within the area. Cutting or gathering of firewood will be prohibited anywhere within the area. Within designated recreation sites (Aguirre Spring and La Cueva), open fires will be confined to existing fire rings provided. 	(See above.)	(See above.)	(See above.)
223.	<p>Allowable Use: Picacho Peak is identified for potential acquisition and would be managed with temporary special management (if acquired) until an RMP can be amended. Temporary special management would include:</p> <ul style="list-style-type: none"> • ROW exclusion • VRM Class II • OHV designation – limited to designated roads • Closed to mineral material sales 	<p>Allowable Use: Picacho Peak SRMA (3,355 acres):</p> <ul style="list-style-type: none"> • ROW exclusion • OHV Designation – Closed • Mechanized use – limited to designated roads and trails • Develop interpretive sites and materials for ROVs within the SRMA. 	Allowable Use: Same as Alternative B.	Allowable Use: No similar allowable use. Picacho Peak would not be designated as an SRMA.
224.	Allowable Use: The Monument is open to overnight camping.	Allowable Use: Prohibit overnight camping at the Sierra Vista and Baylor Canyon Trailheads. The remainder of the Monument is open to overnight camping.	Allowable Use: The Monument is open to overnight camping as designated.	Allowable Use: Limit overnight camping to 2 nights at the Sierra Vista and Baylor Canyon Trailheads. The remainder of the Monument is open to overnight camping.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
225.	<p>Allowable Use: Prohibit recreational shooting in the following areas for public safety² (Appendix A, Figure 2-9, Alternative A: Public Safety No-Shooting Zones): 5,460 acres:</p> <ul style="list-style-type: none"> • Within the rim of Kilbourne Hole NNL 	<p>Allowable Use: Prohibit recreational shooting in the following areas for public safety (Appendix A, Figure 2-10, Alternative B: Public Safety No-Shooting Zones): 31,156 acres:</p> <ul style="list-style-type: none"> • Within one-half mile of Kilbourne Hole NNL (9,457 acres) • Doña Ana Mountains SRMA (7,284 acres) • Within one-half mile of Dripping Springs Natural Area • Within one-half mile of Aguirre Spring Recreation Area • Within one-half mile of Soledad Canyon Day Use Area • Within one-half mile of Baylor Canyon, including the trailhead • Within one-half mile of Sierra Vista trailhead 	<p>Allowable Use: Prohibit recreational shooting in the following areas for public safety (Appendix A, Figure 2-11, Alternative C: Public Safety No-Shooting Zones): 29,731 acres: Same as Alternative B, except:</p> <ul style="list-style-type: none"> • Doña Ana Mountains SRMA (5,858 acres) 	<p>Allowable Use: Prohibit recreational shooting in the following areas for public safety (Appendix A, Figure 2-12, Alternative D: Public Safety No-Shooting Zones): 26,677 acres: Same as Alternative B, except:</p> <ul style="list-style-type: none"> • Southern Doña Ana Mountains RMZ (2,804 acres)
226.	<p>Management Direction: Prohibit dogs and pets in Organ/Franklin Mountains ACEC.</p>	<p>Management Direction: Prohibit dogs and pets in Organ/Franklin Mountains ACEC.</p>	<p>Management Direction: Prohibit dogs and pets in Dripping Springs Natural Area.</p>	<p>Management Direction: No similar management direction.</p>
227.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: If monitoring indicates an archaeological site or cultural or natural resource listed as a Monument ROV is showing degradation, implement restrictions on recreational activities, if consistent with recreation objectives. Future restrictions could include, but are not limited to:</p> <ul style="list-style-type: none"> • Allowing camping in designated sites only • Prohibiting campfires in archaeological sites • Prohibiting domestic pets or pack animals in cultural resource locations listed or eligible for listing on the National Register of Historic Places, with the exception of historic roads and trails • Prohibiting climbing in areas with sensitive cultural resources 	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: No similar management direction.</p>
Lands, Realty, and Cadastral Survey				
228.	<p>Goals:</p> <ul style="list-style-type: none"> • Manage the lands, realty, and cadastral survey programs in support of national, regional, and local needs by responsibly managing land boundaries, administering existing and future authorizations, and facilitating land tenure adjustments that protect the Monument resources, objects, and values. 			
229.	<p>Objective: Facilitate the acquisition or exchange of public land in order to provide the most efficient management of public resources. In addition, the program is responsible for granting ROWs across public land and acquiring easements.</p>	<p>Objective: Facilitate the acquisition or exchange of public land to provide the most efficient management of public resources and protect Monument resources, objects, and values.</p>	<p>Objective: Same as Alternative B.</p>	<p>Objective: Same as Alternative B.</p>

² The Final Rule for 43 CFR Part 8360 published August 10, 1983 (https://archives.federalregister.gov/issue_slice/1983/8/10/36361-36386.pdf#page=24), and the following referenced federal regulations provide for legal enforcement of a Restricted Use Public Safety Zone. 43 CFR Part 8360 provides four legal means to enforce Restricted Use Public Safety Zones at developed recreation sites and areas on BLM-administered public lands. Developed recreation sites and areas means sites and areas that contain structures or capital improvements primarily used by the public for recreation purposes. Such sites or areas may include such features as: Delineated spaces for parking, camping or boat launching; sanitary facilities; potable water; grills or fire rings; tables; or controlled access. The primary purpose of the “Restricted Use Public Safety Zones” is to ensure the welfare and safety of all Monument visitors. The proposed “Restricted Use Public Safety Zones” would ensure safe, consistent, and enforceable deconfliction of recreation activities where a modern or primitive firearm would be used on BLM-managed public lands for recreational shooting or hunting purposes and Monument visitors engaged in non-firearms related recreation.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
230.	Objective: No similar objective.	Objective: Facilitate the acquisition or exchange of public land to maintain and improve access to public lands in the Monument.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
231.	Objective: No similar objective.	Objective: Authorize new ROWs only if they are necessary for the care and management of Monument resources, objects, and values.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
232.	Objective: No similar objective.	Objective: Facilitate maintenance of existing ROWs to meet community needs and protect public safety, consistent with protection Monument resources, objects, and values.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
233.	Management Direction: A total of approximately 93,110 acres of State Trust Land and 56,210 acres of private land are identified for potential acquisition. All State Trust Land and private land will be acquired within ACECs and other special management areas through exchange or purchase at fair market value, provided the landowner is in agreement with such acquisition. Within the Mimbres Planning Area, 1,637 acres have been acquired since 1993.	Management Direction: A total of approximately 93,110 acres of State Trust Land and 56,210 acres of private land are identified for potential acquisition. Attempt to enter into an agreement to initiate an exchange for State Trust land within the Monument boundary in accordance with the Dingell Act (Public Law 116-9).	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
234.	Management Direction: Organ Mountains – Acquire legal public access for vehicular use south of Soledad Canyon through private properties.	Management Direction: Acquire legal public access for vehicular use to Achenbach Canyon south of Soledad Canyon through private properties to improve public access to the Organ Mountains Wilderness.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
235.	Management Direction: No similar management direction.	Management Direction: Acquire legal public access to the Sierra de Las Uvas Wilderness Area.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
236.	Management Direction: No similar management direction.	Management Direction: Acquire legal public access to Picacho Peak SRMA.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
237.	Management Direction: No applications will be accepted for disposal under the Desert Land Act.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
238.	Allowable Use: Manage 286,439 acres as ROW exclusion areas (Appendix A, Figure 2-13 , Alternative A: Right-of-Way Exclusion and Avoidance Areas), including: <ul style="list-style-type: none"> • Picacho Peak Recreation Area • ACECs • Aden Lava Flow RNA • Kilbourne Hole NNL • Wilderness areas 	Allowable Use: Manage 288,169 acres as ROW exclusion areas (Appendix A, Figure 2-14 , Alternative B: Right-of-Way Exclusion and Avoidance Areas), including: <ul style="list-style-type: none"> • Picacho Peak SRMA • ACECs • Kilbourne Hole NNL • Wilderness areas 	Allowable Use: Manage 286,497 acres as ROW exclusion areas (Appendix A, Figure 2-15 , Alternative C: Right-of-Way Exclusion and Avoidance Areas), including: <ul style="list-style-type: none"> • Picacho Peak SRMA • ACECs • Kilbourne Hole NNL • Wilderness areas 	Allowable Use: Manage 245,057 acres as ROW exclusion areas (Appendix A, Figure 2-16 , Alternative D: Right-of-Way Exclusion and Avoidance Areas), including: <ul style="list-style-type: none"> • Kilbourne Hole NNL • Wilderness areas

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
239.	<p>Allowable Use: Manage 210,152 acres as ROW avoidance areas (Appendix A, Figure 2-13, Alternative A: Right-of-Way Exclusion and Avoidance Areas), including:</p> <ul style="list-style-type: none"> • Butterfield Overland NHT • VRM Class II areas • Remainder of the Monument <p>Avoidance criteria from Presidential Proclamation 9131 (3 CFR 9131 [2014]) are: Exclude new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objects, and values or are mandated by law.</p>	<p>Allowable Use: Manage 208,421 acres as ROW avoidance areas (Appendix A, Figure 2-14, Alternative B: Right-of-Way Exclusion and Avoidance Areas), including:</p> <ul style="list-style-type: none"> • Butterfield Overland NHT • Remainder of the Monument <p>Avoidance criteria from Presidential Proclamation 9131 (3 CFR 9131 [2014]) are: Exclude new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objects, and values or are mandated by law.</p>	<p>Allowable Use: Manage 210,094 acres as ROW avoidance areas (Appendix A, Figure 2-15, Alternative C: Right-of-Way Exclusion and Avoidance Areas), including:</p> <ul style="list-style-type: none"> • Butterfield Overland NHT • Remainder of the Monument <p>Avoidance criteria from Presidential Proclamation 9131 (3 CFR 9131 [2014]) are: Exclude new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objects, and values or are mandated by law.</p>	<p>Allowable Use: Manage 251,534 acres as ROW avoidance areas (Appendix A, Figure 2-16, Alternative D: Right-of-Way Exclusion and Avoidance Areas), including:</p> <ul style="list-style-type: none"> • Butterfield Overland NHT • Remainder of the Monument <p>Avoidance criteria from Presidential Proclamation 9131 (3 CFR 9131 [2014]) are: Exclude new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objects, and values or are mandated by law.</p>
240.	<p>Management Direction: Apply the following stipulations to new facilities within avoidance areas:</p> <ul style="list-style-type: none"> • Facilities would not be located parallel to the Butterfield Overland NHT. • Facilities would not be located within one-fourth mile of any stage station on the Butterfield Overland NHT. • Facilities would not be located in riparian areas. • Access routes would be limited and considered on a case-by-case basis. 	<p>Management Direction: Apply the following stipulations to new authorizations:</p> <ul style="list-style-type: none"> • Surface disturbance is prohibited within one-half mile on either side of the Butterfield Overland NHT. • Ground-disturbing activities are prohibited in suitable special status plant species habitat. • Facilities will not be located within one-fourth mile of riparian areas. • Access routes will be limited and considered on a case-by-case basis. 	<p>Management Direction: Apply the following stipulations to new authorizations:</p> <ul style="list-style-type: none"> • Surface disturbance is prohibited within one-fourth mile on either side of the Butterfield Overland NHT. • Facilities will not be located within one-fourth mile of riparian areas. • Access routes will be limited and considered on a case-by-case basis. 	<p>Management Direction: Apply the following stipulations to new authorizations:</p> <ul style="list-style-type: none"> • Surface disturbance is prohibited within 1 mile on either side of the Butterfield Overland NHT. • Facilities will not be located within riparian areas. • Access routes will be limited and considered on a case-by-case basis.
241.	<p>Management Direction: Existing ROWs within exclusion areas are recognized as grandfathered and operation, maintenance, and renewal of these facilities would be allowed to continue within the scope of the ROW grant.</p>	<p>Management Direction: Operations, maintenance, renewal, or upgrade of existing ROWs shall be allowed within the authorized width of existing ROW on Monument lands. Newly submitted proposed actions taking place within the authorized width of existing ROWs located on Monument lands shall be accepted, analyzed, and processed in accordance with appropriate statutes, regulations, agency policy, and the land use goals, objectives, and direction contained in this RMP. Newly submitted proposed actions that would add socioeconomic value to the local and/or regional community, to include, but not limited to, infrastructure modernization projects (for example, high-speed telecommunications, fiber optics lines, and others) and that possess design features that avoid, remove, or appropriately mitigate potential adverse impacts on Monument resources, resource values, or objects of scientific and historic interest would be included as stipulations in an authorization. The Authorized Officer is the final decision authority for all newly submitted proposed actions and authorizations that would occur within the authorized width of an existing ROW located on Monument lands.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
242.	<p>Management Direction: Management will continue to authorize routine commercial realty actions under the authority of 43 CFR 2920 throughout the 20-year life of the RMP.</p>	<p>Management Direction: Management will continue to authorize routine commercial realty actions under the authority of 43 CFR 2920 throughout the 20-year life of the RMP as long as they are consistent with the care and management of Monument resources, objects, and values.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
243.	<p>Management Direction: Doña Ana Mountains ACEC lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions Retain all public land 	<p>Management Direction: Doña Ana Mountains ACEC lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions. Retain all BLM-administered land. 	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: No similar management direction. Undesignate Doña Ana Mountains ACEC.</p>
244.	<p>Management Direction: Robledo Mountains ACEC lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions. Retain all BLM-administered land; acquire all state trust inholdings through exchange or purchase at fair market value, provided that the landowner is in agreement with such acquisition. 	<p>Management Direction: No similar management direction. Undesignate Robledo Mountains ACEC.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
245.	<p>Management Direction: Organ/Franklin Mountains ACEC lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions, except within existing utility corridors. The east–west corridor near Vado and the ones running north and south will be confined to a width of one-fourth mile. The corridor in the Anthony Gap area will be confined to a width of one-half mile. Retain all BLM-administered land; acquire all state trust and private land inholdings through exchange or purchase at fair market value, provided the landowner is in agreement with such acquisition. 	<p>Management Direction: Organ/Franklin Mountains ACEC lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions, except within existing utility corridors. The east–west corridor near Vado and the ones running north and south will be confined to a width of one-fourth mile. The corridor in the Anthony Gap area will be confined to a width of one-half mile. Retain all BLM-administered land; acquire all state trust and private land inholdings through exchange, donation, or purchase at fair market value, provided the landowner is in agreement with such acquisition. 	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: No similar management direction. Undesignate Organ/Franklin Mountains ACEC.</p>
246.	<p>Management Direction: Butterfield Overland NHT lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Retain all BLM-administered land; acquire all State Trust and private land inholdings (with emphasis on Stage Stations) through exchange or purchase at fair market value, provided that the landowner is in agreement with such acquisition Restrict authorizations for ROWs Acquire land around Picacho Peak next to the Butterfield Overland Trail 	<p>Management Direction: Butterfield Overland NHT lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Acquire non-federally owned segments of the Butterfield Overland NHT within the Monument 	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
247.	<p>Management Direction: Aden Lava Flow RNA lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions 	<p>Management Direction: No similar management direction. Undesignate the Aden Lava Flow RNA.</p>	<p>Management Direction: No similar management direction. Undesignate the Aden Lava Flow RNA.</p>	<p>Management Direction: No similar management direction. Undesignate the Aden Lava Flow RNA.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
248.	<p>Management Direction: Kilbourne Hole NNL lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions. Retain all BLM-administered land; acquire all State Trust and private land inholdings through exchange or purchase at fair market value, provided that the landowner is in agreement with such acquisition. 	<p>Management Direction: Kilbourne Hole NNL lands, realty, and cadastral survey management prescriptions:</p> <ul style="list-style-type: none"> Exclude authorizations for new ROWs in accordance with other lands decisions. Retain all BLM-administered land; acquire all State Trust and private land inholdings through exchange, donation, or purchase at fair market value, provided that the landowner is in agreement with such acquisition. 	<p>Management Direction: Same as Alternative A.</p>	<p>Management Direction: Same as Alternative A.</p>
249.	<p>Management Direction: Specific items to be examined while considering the merits of any acquisition action include:</p> <ul style="list-style-type: none"> Consistency and conformance with current planning Relative values Public interest Willingness to sell or exchange on part of the landowner Prime and unique farmlands Floodplain/flood hazard evaluation Cultural and paleontological resource values Native American religious values Visual resources ACECs Wetlands and riparian areas Existing rights and uses Controversy Health and safety Adjacent uses and ownership Air resources Special status species plants or animals and their habitat Mineral resources Recreation and wilderness values 	<p>Management Direction: Specific items to be examined while considering the merits of any acquisition action include:</p> <ul style="list-style-type: none"> Consistency and conformance with current planning Relative values Public interest Willingness to sell or exchange on part of the landowner Floodplain/flood hazard evaluation Cultural and paleontological resource values Native American religious values Visual resources Wetlands and riparian areas Existing rights and uses Controversy Health and safety Adjacent uses and ownership Air resources Special status species plants or animals and their habitat Mineral resources Recreation and wilderness values Condition of boundaries 	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
250.	<p>Management Direction: Acquire private and State Trust Lands in areas that have high resource values or unique characteristics that would enhance the management of BLM-administered land, and dispose of BLM-administered land that is valuable for urban expansion or other physical characteristics.</p>	<p>Management Direction: Acquire private and State Trust Lands in areas that have high resource values or unique characteristics that would enhance the management of BLM-administered land. Manage acquired lands the same as adjacent land.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
251.	<p>Management Direction: Exchange is the preferred method of acquisition by the BLM, and every effort is made to avoid creating split-estate when exchanging lands.</p>	<p>Management Direction: Avoid creating split-estate when acquiring or exchanging lands.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
252.	Management Direction: Prior to filing a formal written proposal, an informal discussion of the exchange proposal is held with the nonfederal party. At this time, formal exchange proposals that are clearly not in the public interest are discouraged. Written proposals are reviewed to determine whether the lands are covered by an approved RMP or MFP.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.	Management Direction: Same as Alternative A.
253.	Management Direction: All Federal lands and interests in lands within the boundaries of the Monument (496,591 acres) are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition under the public land laws, including withdrawal 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.	Management Direction: All federal lands and interests in lands within the boundaries of the Monument (496,591 acres) are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition under the public land laws, including withdrawal 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. Federal land is not open to disposal through land exchange, land sales, State grants, Recreation and Public Purpose Act leases or sales, desert land entries, Indian allotments or commercial or agricultural leases.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
254.	Management Direction: No similar management direction.	Management Direction: Consider issuing ROWs for existing RS 2477 roads if compatible with protection of Monument resources, objects, and values.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
Transportation and Access				
255.	Goals: <ul style="list-style-type: none"> Manage the Monument travel and transportation system to protect objects and resources and ensure sustainable public use and enjoyment. 			
256.	Objective: Enhance access to and across BLM-administered land in a manner that is compatible with the protection of sensitive resource values. Identify areas where access is lacking or inadequate as well as those where access hinders successful management in other programs, and strive to achieve a balance where the public can access BLM-administered land while having minimal detrimental impacts on natural resources.	Objective: Maintain access to and across BLM-administered land in a manner that is compatible with the protection of Monument resources, objects, and values. Identify areas where access is lacking or inadequate as well as those where access hinders successful management in other programs and strive to achieve a balance where the public can access BLM-administered land while having minimal detrimental impacts on natural resources.	Objective: Enhance access to and across BLM-administered land in a manner that is compatible with the protection of Monument resources, objects, and values. Identify areas where access is lacking or inadequate as well as those where access hinders successful management in other programs and strive to achieve a balance where the public can access BLM-administered land while having minimal detrimental impacts on natural resources.	Objective: Same as Alternative C.
257.	Objective: No similar objective.	Objective: Determine appropriate level of access as open, closed, or limited for all travel modes (from motorized to nonmotorized, including access for visitors with disabilities) to the Monument to ensure compatibility with Monument objects and minimize user conflicts.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
258.	Objective: No similar objective.	Objective: Develop a Comprehensive Trails and Travel Management Plan to identify and designate routes within the Monument according to type and condition of use.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
259.	Objective: No similar objective.	Objective: Provide adequate access for administrative purposes and to accommodate public use in support of BLM's multiple-use programs.	Objective: Same as Alternative B.	Objective: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
260.	Objective: No similar objective.	Objective: Support a culture of surface travel user stewardship and conservation of the landscape during user travel.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
261.	Objective: No similar objective.	Objective: Within five years of the signing of the RMP ROD, develop an OMDPNM travel and transportation management plan that inventories, identifies, and designates allowable use of all linear assets on Monument lands (e.g., roads, trails, trailheads, and parking lots) and analyzes potential impacts on Monument resources, objects, and values in accordance with the NEPA and BLM Manual 1626 – Travel and Transportation Management Manual.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
262.	Management Direction: Organ Mountains – Acquire legal public access for vehicular use south of Soledad Canyon through private properties.	Management Direction: Acquire legal public access for vehicular use to Achenbach Canyon south of Soledad Canyon through private properties to improve public access to the Organ Mountains Wilderness.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
263.	Management Direction: No similar management direction.	Management Direction: Acquire legal public access to the Sierra de Las Uvas Wilderness Area.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
264.	Management Direction: West Potrillo Mountains – Acquire legal public access to the north and west sides.	Management Direction: No similar management direction.	Management Direction: No similar management direction.	Management Direction: No similar management direction.
265.	Management Direction: Acquire land around Picacho Peak next to the Butterfield Overland NHT.	Management Direction: Acquire non-federally owned segments of the Butterfield Overland NHT within the Monument.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
266.	Management Direction: No similar management direction.	Management Direction: Acquire legal public access to Picacho Peak SRMA.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
267.	<p>Allowable Use: OHV travel designations are as follows (Appendix A, Figure 2-17, Alternative A: Transportation and Access):</p> <p>Closed to OHV travel (242,889 acres)</p> <ul style="list-style-type: none"> • Designated wilderness areas • Scenic portion of Organ/Franklin Mountains ACEC <p>Limited to designated roads (253,702 acres)</p> <ul style="list-style-type: none"> • Doña Ana Mountains ACEC • Robledo Mountains ACEC • Organ/Franklin Mountains ACEC outside the scenic portion • Aden Lava Flow RNA • Kilbourne Hole NNL • Remainder of the Monument 	<p>Allowable Use: OHV travel designations are as follows (Appendix A, Figure 2-18, Alternative B: Transportation and Access):</p> <p>Closed to OHV travel (269,697 acres)</p> <ul style="list-style-type: none"> • Designated wilderness areas • Scenic portion of Organ/Franklin Mountains ACEC • Northern Doña Ana Mountains RMZ • Picacho Peak SRMA • Doña Ana Mountains ACEC • Kilbourne Hole NNL <p>Limited to designated roads (226,894 acres)</p> <ul style="list-style-type: none"> • Organ/Franklin Mountains ACEC outside the scenic portion • Remainder of the Monument 	<p>Allowable Use: OHV travel designations are as follows (Appendix A, Figure 2-19, Alternative C: Transportation and Access):</p> <p>Closed to OHV travel (255,870 acres)</p> <ul style="list-style-type: none"> • Designated wilderness areas • Northern Doña Ana Mountains RMZ • Picacho Peak SRMA • Kilbourne Hole NNL <p>Limited to designated roads (240,721 acres)</p> <ul style="list-style-type: none"> • Doña Ana Mountains ACEC • Organ/Franklin Mountains ACEC • Remainder of the Monument 	<p>Allowable Use: OHV travel designations are as follows (Appendix A, Figure 2-20, Alternative D: Transportation and Access):</p> <p>Closed to OHV travel (239,596 acres)</p> <ul style="list-style-type: none"> • Designated wilderness areas <p>Limited to designated roads (256,994 acres)</p> <ul style="list-style-type: none"> • Northern Doña Ana Mountains RMZ • Kilbourne Hole NNL • Remainder of the Monument

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
268.	<p>Allowable Use: Mechanized travel designations are as follows (Appendix A, Figure 2-26, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks):</p> <p>Closed (239,596 acres)</p> <ul style="list-style-type: none"> Designated wilderness areas <p>Limited to designated roads and trails (256,994 acres)</p> <ul style="list-style-type: none"> Upper Ice Canyon above drift fence in Organ/Franklin Mountains ACEC Remainder of the Monument 	<p>Allowable Use: Mechanized travel designations are as follows (Appendix A, Figure 2-21, Alternative B: Transportation and Access, Mechanized Use):</p> <p>Closed (239,596 acres)</p> <ul style="list-style-type: none"> Designated wilderness areas <p>Limited to designated roads and trails (236,619 acres)</p> <ul style="list-style-type: none"> Upper Ice Canyon above drift fence in Organ/Franklin Mountains ACEC Remainder of the Monument 	<p>Allowable Use: Mechanized travel designations are as follows (Appendix A, Figure 2-26, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks):</p> <p>Closed (239,596 acres)</p> <ul style="list-style-type: none"> Designated wilderness areas <p>Limited to designated roads and trails (256,994 acres)</p> <ul style="list-style-type: none"> Upper Ice Canyon above drift fence in Organ/Franklin Mountains ACEC Remainder of the Monument 	<p>Allowable Use: Mechanized travel designations are as follows (Appendix A, Figure 2-26, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks):</p> <p>Closed (239,596 acres)</p> <ul style="list-style-type: none"> Designated wilderness areas <p>Limited to designated roads and trails (256,994 acres)</p> <ul style="list-style-type: none"> Remainder of the Monument
269.	<p>Allowable Use: All designated wilderness areas (239,596 acres) are closed to motorized and mechanized travel except for administrative and emergency purposes.</p>	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>
270.	<p>Allowable Use: Except for emergency or authorized administrative purposes, motorized vehicle use in the Monument shall be limited to designated roads (496,591 acres).</p>	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>
271.	<p>Allowable Use: Except for emergency or authorized administrative purposes, nonmotorized mechanized vehicle use in the Monument shall be limited to roads and trails designated for their use (496,591 acres).</p>	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>
272.	<p>Allowable Use: Prohibit the use of unmanned aerial vehicles (UAVs) in the Monument, except for BLM administrative use, until implementation-level planning is completed.</p>	<p>Allowable Use: Prohibit the use of UAVs in the Monument except for BLM administrative use.</p>	<p>Allowable Use: Limit the use of UAVs to designated areas in the Monument. Specific designation of areas will occur through implementation-level planning.</p>	<p>Allowable Use: Same as Alternative C.</p>
273.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: Where OHVs are causing or would cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until they are eliminated and measures implemented to prevent recurrence (43 CFR §8341.2). Monitoring will track changes to paleontological resources based on trails and travel management actions. Certain routes may be closed at the implementation level based on the findings of the Comprehensive Trails and Travel Management Plan.</p>	<p>Management Direction: Where OHVs are causing or would cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, water resources, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until they are eliminated and measures implemented to prevent recurrence (43 CFR §8341.2). The Paleontological Resources Monitoring Activity Plan will track changes to paleontological resources based on trails and travel management actions. Certain routes may be closed at the implementation level based on the findings of the Comprehensive Trails and Travel Management Plan.</p>	<p>Management Direction: Same as Alternative C.</p>
274.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: Reroute existing or site new routes and trails to avoid scientifically important paleontological resources, petrified wood specimens, and unique geological features.</p>	<p>Management Direction: Where the opportunity exists, reroute existing or site new routes and trails to avoid scientifically important paleontological resources, petrified wood specimens, and unique geological features.</p>	<p>Management Direction: Same as Alternative C.</p>
275.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: Coordinate with Fort Bliss Range Safety office when conducting travel management planning for areas near the boundary.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
276.	Management Direction: No similar management direction.	Management Direction: Continue to work with counties to manage RS 2477 roads in compliance with FLPMA on a site-specific basis.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
277.	Management Direction: No similar management direction.	Management Direction: Within designated wilderness areas, identify routes previously used for motorized travel to be decommissioned and reclaimed when needed to maintain wilderness character and restore ecological functions.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
278.	Management Direction: No similar management direction.	Management Direction: Identify opportunities to create new routes for horseback and pedestrian travel in the Monument.	Management Direction: No similar management direction.	Management Direction: Same as Alternative B.
279.	Management Direction: No similar management direction.	Management Direction: Develop and implement educational methods, such as signage, brochures, or other means, to promote a culture of surface travel user stewardship and conservation of the landscape during user travel.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
280.	Management Direction: Any road or trail created by the passage of vehicles between December 1993 and May 2014 will be considered as open, closed or limited and will be subject to closure.	Management Direction: Any road or trail created by the passage of vehicles between December 1993 and Monument designation in May 2014 will be considered as open, closed or limited and will be subject to closure.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
	ACECs			
281.	Goals: <ul style="list-style-type: none"> Manage ACECs to protect the resources that meet the relevant and important values and protect Monument objects. 			
282.	Designation: Designate the following ACECs (Appendix A, Figure 2-22 , Alternative A: Areas of Critical Environmental Concern and Research Natural Areas): 64,073 acres <ul style="list-style-type: none"> Doña Ana Mountains Robledo Mountains Organ/Franklin Mountains 	Designation: Designate the following ACECs (Appendix A, Figure 2-23 , Alternative B: Areas of Critical Environmental Concern): 71,359 acres <ul style="list-style-type: none"> Doña Ana Mountains Organ/Franklin Mountains Broad Canyon East Potrillo Mountains Picacho Peak 	Designation: Designate the following ACECs (Appendix A, Figure 2-24 , Alternative C: Areas of Critical Environmental Concern): 38,085 acres <ul style="list-style-type: none"> Doña Ana Mountains Organ/Franklin Mountains 	Designation: Undesignate all ACECs.
283.	Designation: Designate 1,427 acres as the Doña Ana Mountains ACEC. Manage for the protection of biological, scenic, and cultural values.	Designation: Same as Alternative A.	Designation: Same as Alternative A.	Designation: Undesignate the Doña Ana Mountains ACEC. Manage in compliance with Proclamation 9131 (3 CFR 9131 [2014]).

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
284.	<p>Management Direction: Manage Doña Ana Mountains ACEC as follows:</p> <ul style="list-style-type: none"> • VRM: Class I • ROW: Exclusion • OHV: Limited to designated roads • Livestock grazing: Available • Fluid minerals: Closed • Locatable minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Exclude feral goats and other exotic animals • Manage for primitive and semiprimitive recreational opportunities. • Manage for ROS semiprimitive non-motorized, semiprimitive motorized, and roaded natural classes • Close roads that provide access for illegal plant collecting • Develop primitive campsites in the “bowl” on north side (10 acres) • Land tenure: Retention 	<p>Management Direction: Manage Doña Ana Mountains ACEC as follows:</p> <ul style="list-style-type: none"> • VRM: Class II • ROW: Exclusion • OHV: Closed • Livestock grazing: Available • Fluid minerals: Closed • Locatable Minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Exclude feral domestic animals • Do not develop primitive campsites in the “bowl” on north side (10 acres) • Land Tenure: Retention 	<p>Management Direction: Same as Alternative B, except:</p> <ul style="list-style-type: none"> • OHV: Limited to designated roads 	<p>Management Direction: No similar management direction.</p>
285.	<p>Designation: Designate 7,829 acres as the Robledo Mountains ACEC. Manage to protect biological and scenic values and to protect, research, and interpret paleontological values.</p>	<p>Designation: Undesignate the ACEC. It is entirely within designated Wilderness.</p>	<p>Designation: Same as Alternative B.</p>	<p>Designation: Same as Alternative B.</p>
286.	<p>Management Direction: Manage Robledo Mountains ACEC outside Prehistoric Trackways National Monument as follows:</p> <ul style="list-style-type: none"> • VRM: Class I • ROW: Exclusion • OHV: Limited to designated roads • Fluid minerals: Closed • Locatable minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Land tenure: Retention • Acquire legal public access • Manage for primitive and semiprimitive recreation opportunities (no developed facilities) • Allow natural fires to burn under prescribed conditions • Manage for ROS primitive and semiprimitive nonmotorized and semiprimitive motorized classes 	<p>Management Direction: No similar management direction. Undesignate the Robledo Mountains ACEC.</p>	<p>Management Direction: No similar management direction. Undesignate the Robledo Mountains ACEC.</p>	<p>Management Direction: No similar management direction. Undesignate the Robledo Mountains ACEC.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
287.	<p>Designation: Designate 54,817 acres as the Organ/Franklin Mountains ACEC. Manage to protect biological, scenic, riparian, special status species, and cultural values. Manage in accordance with the Organ Mountains Coordinated Resource Management Plan. Monitor the area in accordance with the concepts of limits of acceptable change with emphasis on the most biologically or culturally sensitive areas.</p>	<p>Designation: Designate 55,223 acres as the Organ/Franklin Mountains ACEC. Manage to protect biological, scenic, riparian, special status species, and cultural values. Manage in accordance with the Organ Mountains Coordinated Resource Management Plan. Monitor the area in accordance with the concepts of limits of acceptable change with emphasis on the most biologically or culturally sensitive areas.</p>	<p>Designation: Designate 36,658 acres as the Organ/Franklin Mountains ACEC, removing the scenic portion that overlaps with wilderness. Manage to protect biological, scenic, riparian, special status species, and cultural values. Manage in accordance with the Organ Mountains Coordinated Resource Management Plan. Monitor the area in accordance with the concepts of limits of acceptable change with emphasis on the most biologically or culturally sensitive areas.</p>	<p>Designation: Undesignate the Organ/Franklin Mountains ACEC. Manage according to Proclamation 9131 (3 CFR 9131 [2014]).</p>
288.	<p>Management Direction: Manage the Organ/Franklin Mountains ACEC as follows:</p> <ul style="list-style-type: none"> • VRM: Manage mountainous portions (above 5,000 feet) as VRM Class I; manage other portions as VRM Class III or IV • ROW: Exclusion except within existing utility corridors • OHV: Limited to designated roads except for the scenic ACEC portion (8,800 acres), which is closed to OHV use • Fluid minerals: Closed • Locatable minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Land tenure: Retention • Acquire legal public access • Manage as Class II air quality • Manage in accordance with the Organ Mountains Coordinated Resource Management Plan • Prohibit dogs and pets and require hiking on designated trails only in upper Ice Canyon above drift fence • Manage for ROS primitive semiprimitive, nonmotorized, semiprimitive, and roaded natural classes • Monitor the area in accordance with limits of acceptable change with emphasis on the most biologically or culturally sensitive areas 	<p>Management Direction: Manage Organ/Franklin Mountains ACEC as follows:</p> <ul style="list-style-type: none"> • VRM: Class II • ROW: Exclusion except within existing utility corridors • OHV: Limited to designated roads except for the scenic ACEC portion (8,800 acres), which is closed to OHV use • Fluid minerals: Closed • Locatable Minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Land Tenure: Retention • Acquire legal public access • Manage as Class II air quality • Manage in accordance with the Organ Mountains Coordinated Resource Management Plan • Prohibit dogs and pets in the ACEC • Require hiking on designated trails only in upper Ice Canyon above drift fence • Monitor the area in accordance with limits of acceptable change with emphasis on the most biologically or culturally sensitive areas. • Monitor impacts from recreation on wildlife and their habitats 	<p>Management Direction: Same as Alternative B except the following:</p> <ul style="list-style-type: none"> • OHV: Limited to designated roads • Prohibit dogs and pets at Dripping Springs Natural Area • Prohibit dogs and pets in upper Ice Canyon above drift fence 	<p>Management Direction: No similar management direction. Organ/Franklin Mountains ACEC would be undesignated.</p>
289.	<p>Designation: No similar designation.</p>	<p>Designation: Designate 4,720 acres as the Broad Canyon ACEC. Manage to protect scenic, biological, and cultural values.</p>	<p>Designation: No similar designation.</p>	<p>Designation: No similar designation.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
290.	Management Direction: No similar management direction.	Management Direction: Manage Broad Canyon ACEC as follows: <ul style="list-style-type: none"> • VRM: Class II • ROW: Exclusion • OHV: Limited to designated roads • Fluid minerals: Closed • Locatable Minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Land Tenure: Retention 	Management Direction: No similar management direction. Broad Canyon ACEC would not be designated.	Management Direction: No similar management direction. Broad Canyon ACEC would not be designated.
291.	Designation: No similar designation.	Designation: Designate 9,040 acres as the East Potrillo Mountains ACEC. Manage to protect scenic values.	Designation: No similar designation.	Designation: No similar designation.
292.	Management Direction: No similar management direction.	Management Direction: Manage East Potrillo Mountains ACEC as follows: <ul style="list-style-type: none"> • VRM: Class II • ROW: Exclusion • OHV: Limited to designated roads • Fluid minerals: Closed • Locatable minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Land Tenure: Retention • Acquire State trust land inholdings from willing sellers 	Management Direction: No similar management direction. East Potrillo Mountains ACEC would not be designated.	Management Direction: No similar management direction. East Potrillo Mountains ACEC would not be designated.
293.	Designation: No similar designation.	Designation: Designate 949 acres as the Picacho Peak ACEC. Manage to protect scenic and cultural values.	Designation: No similar designation.	Designation: No similar designation.
294.	Management Direction: No similar management direction.	Management Direction: Manage Picacho Peak ACEC as follows: <ul style="list-style-type: none"> • VRM: Class II • ROW: Exclusion • OHV: Limited to designated roads • Fluid minerals: Closed • Locatable minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Land Tenure: Retention 	Management Direction: No similar management direction. Picacho Peak ACEC would not be designated.	Management Direction: No similar management direction. Picacho Peak ACEC would not be designated.
NHTs				
295.	Goals: <ul style="list-style-type: none"> • Manage to protect, study, and interpret historical values of trails in the Monument. 			
296.	Objective: No similar objective.	Objective: Collaborate with National Trails office of the NPS and other agencies to protect, study and interpret the historic values and associated resources of the Butterfield Overland NHT.	Objective: Same as Alternative B.	Objective: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
297.	<p>Management Direction: Manage the Butterfield Overland NHT (designated January 5, 2023) as follows (Appendix A, Figure 2-25, Alternatives A, B, C, and D: Trails): 4,842 acres</p> <ul style="list-style-type: none"> Land tenure: Retention Acquire legal public access. Limit OHVs to designated roads and trails. ROW: Avoidance Do not allow surface disturbance within one-fourth mile on each side of the NHT. Apply a no surface occupancy stipulation for fluid mineral leasing or application for permit to drill within one-fourth mile of the NHT. Close an area of one-fourth mile on each side of the trail to mineral materials disposal. Do not construct facilities, including power lines, parallel to the NHT. Consider facilities that cross the trail. Manage in accordance with the existing cultural resources management plan. Interpret with an emphasis on passive interpretation, such as signing. Manage as VRM Class II. Manage for ROS semiprimitive motorized class. Acquire land around Picacho Peak next to the NHT. 	<p>Management Direction: Manage the Butterfield Overland NHT (designated January 5, 2023) in accordance with BLM Manual 6250 – National Scenic and Historic Trail Administration and NPS direction. Specific management direction is as follows (Appendix A, Figure 2-25, Alternatives A, B, C, and D: Trails): 4,842 acres</p> <ul style="list-style-type: none"> Prohibit surface-disturbing activities within 1 mile on either side of the NHT. Develop or update a cultural resource management plan for the NHT. Manage as VRM Class II. Acquire non-federally owned segments of the NHT within the Monument. Conduct a viewshed analysis for any surface-disturbing activity within 3 miles on either side of the NHT for the purpose of identifying and evaluating potential impacts on the NHT, its associated historic landscape, and its associated historic features. Subject to the viewshed analysis, reasonable mitigation measures may be required. These may include, but are not limited to, modification of siting or design of visible features to camouflage or otherwise hide the proposed features within the viewshed. <p>Complete a step-down management plan for the segments passing through the BLM Las Cruces District.</p>	<p>Management Direction: Same as Alternative B, except:</p> <ul style="list-style-type: none"> Prohibit surface-disturbing activities within one-half mile on either side of the NHT. 	<p>Management Direction: Same as Alternative B, except:</p> <ul style="list-style-type: none"> Prohibit surface-disturbing activities within one-fourth mile on either side of the NHT.
298.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: Conduct a viewshed analysis for any surface-disturbing activity within 3 miles on either side of the El Camino Real de Tierra Adentro NHT for the purpose of identifying and evaluating potential impacts on the NHT, its associated historic landscape, and its associated historic features. Subject to the viewshed analysis, reasonable mitigation measures may be required. These may include, but are not limited to, modification of siting or design of visible features to camouflage or otherwise hide the proposed features within the viewshed.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
RNAs				
299.	<p>Goals:</p> <ul style="list-style-type: none"> Aden Lava Flow RNA: Manage to protect biological, scenic, geological, and research values. 			
300.	<p>Objective: No similar objective.</p>	<p>Objective: Protect the biological, scenic, geological, and research values of the Aden Lava Flow, and facilitate research and interpretation of paleontological and geological features.</p>	<p>Objective: Same as Alternative B.</p>	<p>Objective: Same as Alternative B.</p>
301.	<p>Designation: Designate 3,736 acres as the Aden Lava Flow RNA. Manage to protect biological, scenic, geological, and research values. Research and interpret paleontological and geological features. Establish research permitting/information exchange process.</p>	<p>Designation: Remove RNA designation and do not designate as an ACEC. The area currently designated as the RNA lies wholly within the Aden Lava Flow Wilderness so would be managed as described in BLM Manual 6340—Management of Designated Wilderness Areas (BLM 2012a).</p>	<p>Designation: Same as Alternative B.</p>	<p>Designation: Same as Alternative B.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
302.	<p>Management Direction: Manage the Aden Lava Flow RNA as follows:</p> <ul style="list-style-type: none"> • VRM: Class II • ROW: Exclusion • OHV: Limited to designated roads • Livestock grazing: Develop grazing activity plan • Fluid minerals: Closed • Locatable Minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Consider chemical brush control where necessary to meet desired plant community objectives • Research and interpret paleontological and geological features • Establish research permitting/information exchange process • Designate parking area (0.25 acre) and trail to crater 	<p>Management Direction: No similar management direction. Undesignate the Aden Lava Flow RNA.</p>	<p>Management Direction: No similar management direction. Undesignate the Aden Lava Flow RNA.</p>	<p>Management Direction: No similar management direction. Undesignate the Aden Lava Flow RNA.</p>
	NNLs			
303.	<p>Goals:</p> <ul style="list-style-type: none"> • Kilbourne Hole NNL: Manage to protect geological values. 			
304.	<p>Objective: No similar objective.</p>	<p>Objective: Protect the geological values of Kilbourne Hole NNL while allowing for recreation and other uses that are consistent with Monument resources, objects, and values.</p>	<p>Objective: Same as Alternative B.</p>	<p>Objective: Same as Alternative B.</p>
305.	<p>Management Direction: Manage 5,460 acres as Kilbourne Hole NNL (Appendix A, Figure 2-26, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks). Manage to protect geological values. Interpret geological features by signing and establish primitive facilities</p>	<p>Management Direction: Same as Alternative A.</p>	<p>Management Direction: Same as Alternative A.</p>	<p>Management Direction: Same as Alternative A.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
306.	<p>Management Direction: Manage Kilbourne Hole NNL as follows:</p> <ul style="list-style-type: none"> • VRM: Class III • ROW: Exclusion • OHV: Limited to designated roads • Fluid minerals: Closed • Locatable minerals: Withdrawn from new entry • Coal: Unacceptable • Mineral materials: Closed • Land tenure: Retention • Consider chemical brush control in some portions where necessary to meet desired plant community objectives • Establish safety no-shooting restrictions within the rim • Manage for ROS semiprimitive motorized class • Prohibit casual collection of mineral resources and rockhounding 	<p>Management Direction: Manage Kilbourne Hole NNL the same as under Alternative A, except:</p> <ul style="list-style-type: none"> • VRM: Class II • OHV: Closed • Consider chemical and/or mechanical brush control in some portions, where necessary, to meet desired plant community objectives. • Impose a no-shooting restriction year-round within one-half mile of Kilbourne Hole (9,457 acres). 	<p>Management Direction: Manage Kilbourne Hole NNL the same as under Alternative A, except:</p> <ul style="list-style-type: none"> • VRM: Class II • Consider chemical and/or mechanical brush control in some portions, where necessary, to meet desired plant community objectives • Impose a no-shooting restriction year-round within one-half mile of Kilbourne Hole (9,457 acres) 	<p>Management Direction: Manage Kilbourne Hole NNL the same as under Alternative A, except:</p> <ul style="list-style-type: none"> • VRM: Class II • Impose a no-shooting restriction year-round within one-half mile of Kilbourne Hole (9,457 acres)
	Tribal Interests			
307.	<p>Goal:</p> <ul style="list-style-type: none"> • Engage in consultation with Tribes and Pueblos to ensure their interests and access to the land are recognized, preserved, and protected. 			
308.	Objective: No similar objective.	Objective: Educate the public on the importance of protecting sacred Tribal sites, TCPs and other traditional use areas.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
309.	Objective: No similar objective.	Objective: Ensure that Native American Tribes have access to their traditional use areas, sacred sites, and other areas of cultural significance.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
310.	Management Direction: No similar direction.	Management Direction: Conduct government-to-government consultation with Native American Tribes to identify TCPs, sacred sites, and other traditional use areas within the Monument and ensure they are adequately protected and managed.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
311.	Management Direction: No similar direction.	<p>Management Direction: During consultation with Native American Tribes, coordinate on opportunities to educate the public about Tribes in the planning area. Consider posting signage and provide educational pamphlets/ videos/ newsletters/ Tribal workshops with local schools/ support Tribal led programs on the importance of protecting Tribal and cultural sites.</p> <p>Coordinate with Tribes to invite Tribal members to present information to educate the public.</p>	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
312.	Management Direction: The BLM consults with the New Mexico SHPO and Tribes for any new ground-disturbing activities associated with livestock grazing.	Management Direction: Continue to consult with the New Mexico SHPO and Tribes on any Section 106 undertaking, including livestock grazing, that may have the potential to affect cultural resources and Tribal interests.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
313.	Management Direction: The BLM consults with the New Mexico SHPO and Tribes for federal undertakings that may affect their interests.	Management Direction: Engage with Tribes at the earliest possible point in project development to ensure that Tribal concerns or input are taken into consideration for undertakings that may affect their interests.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
	Public Safety			
314.	Goals: <ul style="list-style-type: none"> • Manage hazards and public use to protect public health and safety. • Protect public and environmental safety by dealing with all hazardous materials and solid wastes on BLM-administered lands. 			
315.	Objective: No similar objective.	Objective: Maintain active fire prevention and educate the public to reduce the threat of human caused fire ignitions.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
316.	Objective: No similar objective.	Objective: Manage facilities and recreation areas for public and environmental health and safety.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
317.	Management Direction: Focus treatments on communities and surrounding areas with the potential for escaped fire or loss of life or property. Focus treatments on BLM-administered land within the 18 WUI areas defined in cooperating with the New Mexico State Forestry Division (2003) and on other areas where BLM-administered land is adjacent to communities.	Management Direction: Focus treatments on communities and surrounding areas with the potential for escaped fire or loss of life or property. Focus treatments on areas identified as containing hazardous fuels buildup, to reduce the risk and cost of fire suppression.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
318.	Management Direction: No similar management direction.	Management Direction: Continue implementing prescribed fire or other fuels reduction treatments in Dripping Springs to reduce public safety risks from wildfire. Identify other recreation areas where prescribed fire or other fuels reduction treatments should be implemented for public safety.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
319.	Management Direction: Clean up those abandoned mine land sites situated in locations where a death or injury has occurred and the site has not already been addressed, or at those sites that are situated on or in immediate proximity to developed recreation sites and areas with high visitor use.	Management Direction: Remediate abandoned mine land sites; prioritize locations where a death or injury has occurred and the site has not already been addressed and those sites that are situated on or in immediate proximity to developed recreation sites and areas with high visitor use.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
320.	Management Direction: Improved interagency coordination for law enforcement, search-and-rescue response, firefighting activities, and communications <ul style="list-style-type: none"> • Firefighter, human life and welfare are the absolute priority • Reduce the risk and cost of severe wildland fires, based upon prioritization of the values to be protected • FMPs consider public health and environmental quality • Proactive floodplain management 	Management Direction: Improve interagency coordination for law enforcement, search-and-rescue response, firefighting activities, and communications <ul style="list-style-type: none"> • Firefighter, human life, and welfare are the absolute priority • Reduce the risk and cost of severe wildland fires, based upon prioritization of the values to be protected • FMPs consider public health and environmental quality • Proactive floodplain management 	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
321.	Management Direction: No similar management direction.	Management Direction: Safely clean up lead shot, other recreational shooting waste, and waste from illegal dumping on the Monument.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
322.	Management Direction: No similar management direction.	Management Direction: Sign and safeguard trails, sidewalks, and facilities to communicate hazards for particular issues with each unique site.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
323.	Management Direction: No similar management direction.	Management Direction: Communicate environmental hazards to the public through signing and media platforms.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
324.	Management Direction: No similar management direction.	Management Direction: Provide clean, user-friendly facilities that offer potable water and restrooms.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
325.	Management Direction: No similar management direction.	Management Direction: During implementation-level planning, identify locations to provide potable water at those recreation facilities that do not already have it.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.
326.	Management Direction: No similar management direction.	Management Direction: Adhere to best management practices for preventing spread of white-nose syndrome when entering and reclaiming abandoned mine land sites.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

**Table 2-3
Alternatives Matrix – Wilderness**

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
	Wilderness Authorities			
1.	<ul style="list-style-type: none"> • Antiquities Act of 1906 • Presidential Proclamation 9131 of May 21, 2014 • Federal Land Policy and Management Act of 1976 • Omnibus Public Land Management Act of 2009 • John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 • Wilderness Act of 1964 • Taylor Grazing Act of 1934 			
	Wilderness Map			
2.	<ul style="list-style-type: none"> • See Appendix A, Figure 2-26 			
3.	<p>Goals:</p> <ul style="list-style-type: none"> • Manage designated wilderness areas in a manner that will preserve wilderness character. • Primarily preserve wilderness character, whereas areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use. • Improve and enhance roads and trails designated for nonmotorized mechanized vehicle use. No additional roads or trails shall be established for nonmotorized mechanized vehicle use unless necessary for public safety or protection of Monument objects and values. • Establish and improve nonmotorized and nonmechanized use trail opportunities (e.g., hiking and horseback riding) within designated wilderness areas. 			
4.	Objective: Manage and protect BLM wilderness areas in such a manner as to preserve wilderness character.	Objective: Same as Alternative A.	Objective: Same as Alternative A.	Objective: Same as Alternative A.
5.	Objective: Manage wilderness for the public purposes of recreational, scenic, scientific, education, conservation, and historic use while preserving wilderness character.	Objective: Same as Alternative A.	Objective: Same as Alternative A.	Objective: Same as Alternative A.
6.	Objective: Effectively manage uses permitted under Section 4(c) and 4(d) of the Wilderness Act of 1964 while preserving wilderness character.	Objective: Effectively manage prohibitions of certain uses under Section 4(c) and Special Provisions under 4(d) of the Wilderness Act of 1964 while preserving wilderness character.	Objective: Same as Alternative B.	Objective: Same as Alternative B.
7.	Objective: Develop wilderness management plans with management objectives to protect wilderness character, while also providing for traditional uses, allowable uses, and recreational opportunities.	Objective: Develop wilderness management plans with management objectives to protect wilderness character, while providing for allowable uses (such as certain recreational, cultural, and historic uses).	Objective: Same as Alternative B.	Objective: Same as Alternative B.
8.	Management Direction: No similar management direction.	Management Direction: Inventory trails and their condition for future improvement and expansion of recreation opportunities.	Management Direction: Same as Alternative B.	Management Direction: Same as Alternative B.

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
9.	<p>Allowable Use: Wilderness areas (239,596 acres) would be:</p> <ul style="list-style-type: none"> • Withdrawn from all forms of entry and location under the public land laws • Closed to new fluid minerals leasing • Closed to new nonenergy solid minerals leasing • Closed to new mineral material disposal • Withdrawn from new locatable mineral entry • Unavailable for coal leasing • ROW exclusion, including for renewable energy • Closed to motorized or mechanized transport for livestock grazing practices except for emergency situations • VRM Class I • Closed to motorized and mechanized travel • No unauthorized landings (for example, helicopters, drones, and paragliders) unless for public health and safety. 	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>	<p>Allowable Use: Same as Alternative A.</p>
10.	<p>Management Direction: A total of approximately 93,110 acres of State Trust land and 56,210 acres of private land are identified for potential acquisition. All State Trust land and private land will be acquired within ACECs and other special management areas through exchange or purchase at fair market value, provided the landowner is in agreement with such acquisition. Within the Mimbres planning area, 1,637 acres have been acquired since 1993.</p>	<p>Management Direction: A total of approximately 93,110 acres of State Trust land and 56,210 acres of private land are identified for potential acquisition. Attempt to enter into an agreement to initiate an exchange for State Trust land within the Monument boundary in accordance with the Dingell Act (Public Law No: 116-9).</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
11.	<p>Management Direction: Organ Mountains – Acquire legal public access for vehicular use south of Soledad Canyon through private properties.</p>	<p>Management Direction: Acquire legal public access for vehicular use to Achenbach Canyon south of Soledad Canyon through private properties, to improve public access to the Organ Mountains Wilderness.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
12.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: Acquire legal public access to the Sierra de Las Uvas Wilderness Area.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>

Row No.	Alternative A – No Action Alternative	Alternative B – Resource Protection	Alternative C – Resource Balance	Alternative D – Resource Use
13.	<p>Management Direction: Recognize existing ROWs within exclusion areas as grandfathered; allow operation, maintenance, and renewal of these facilities to continue within the scope of the ROW grant.</p>	<p>Management Direction: Operations, maintenance, renewal, or upgrade of existing ROWs shall be allowed within the authorized width of existing ROW in designated wilderness. Newly submitted proposed actions taking place within the authorized width of existing ROWs located on Monument lands shall be accepted, analyzed, and processed in accordance with appropriate statutes, regulations, agency policy, and the land use goals, objectives, and direction contained in this RMP. Newly submitted proposed actions that would add socioeconomic value to the local and/or regional community, to include, but not limited to, infrastructure modernization projects (for example, high-speed telecommunications, fiber optics lines, and others) and that possess design features that avoid, remove, or appropriately mitigate potential adverse impacts on wilderness character, Monument resources, resource values, or objects of scientific and historic interest would be included as stipulations in an authorization. The Authorized Officer is the final decision authority for all newly submitted proposed actions and authorizations that would occur within the authorized width of an existing ROW located in designated wilderness.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>
14.	<p>Management Direction: No similar management direction.</p>	<p>Management Direction: Within designated wilderness areas, identify routes previously used for motorized travel to be converted, decommissioned, and reclaimed, when needed, to maintain wilderness character and restore ecological functions.</p>	<p>Management Direction: Same as Alternative B.</p>	<p>Management Direction: Same as Alternative B.</p>

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2.5 SUMMARY COMPARISON OF ENVIRONMENTAL CONSEQUENCES

This section provides a comparison of impacts for the alternatives considered in the RMP/EIS.

2.5.1 Fish, Wildlife, and Habitat

The action alternatives would prioritize the restoration and improvement of terrestrial and aquatic habitat, fish and wildlife populations, ecosystem health, ecological processes, and overall biodiversity. Nonnative and invasive species would be addressed through active management and mitigation. Alternative B emphasizes maintaining or enhancing habitat with the goal of achieving reference plant communities and supporting species augmentation and reintroduction efforts, while allowing for appropriate uses through allocations (such as recreation, vehicle use, and livestock grazing). These uses can impact wildlife through disturbance, avoidance, and competition and can impact habitat through degradation, vegetation composition alteration, and influencing the establishment and spread of invasive and nonnative species. Alternative C would provide more flexibility for resource uses such as recreation and motorized vehicle use, which can impact fish, wildlife, and habitat. Alternative D would emphasize these uses, which would likely increase impacts on fish, wildlife, and habitat. Alternative B contains the largest number of acres that would exclude ROWs and be closed to surface disturbance from motorized vehicles; therefore, it would affect species and habitats less than other alternatives.

2.5.2 Special Status Species

The action alternatives would prioritize the protection and management of habitat for known populations of federal or state listed species and state species of greatest conservation need to prevent the need for listing of federal candidates, and to assist in recovery of listed species. As described in **Section 2.5.1, Fish, Wildlife, and Habitat**, Alternative B would likely have more limited impacts on special status species as compared to Alternatives A, C, and D due to the number of acres that would be closed to surface disturbance from motorized activities and ROW development.

2.5.3 Vegetation Communities

The risk of introducing and spreading invasive plant species over the life of the RMP and in the long term would be lowest under Alternatives B and C, and highest under Alternative D. Under all alternatives, the BLM would implement vegetation treatments that could transition vegetation communities toward a site's ecological capability or the potential natural community. This would result in long-term increases in the vegetation cover, production, species enrichment, and soil water-holding capability. All action alternatives would reduce the impacts on vegetation by including more management actions that address the potential impacts on vegetation and the proper care and management of relevant Monument objects and values. Management direction to address the structure, composition, and plant functional groups, as detailed in ecological site descriptions, would help move vegetation that is departed from the reference state toward desired conditions at a faster rate than Alternative A. Alternative D would have the greatest number of acres open to motorized travel and the fewest restrictions on recreation and travel management, which would result in the greatest potential for direct negative impacts on vegetation. Alternative B, followed by Alternative C, would offer the most protection for vegetation resources due to the acres that would be closed to surface disturbance from motorized activities and ROW development.

2.5.4 Wildland Fire Ecology and Management

The action alternatives would promote the ecological integrity of the native landscapes through proactive fire management. Under all alternatives, the treatments would occur in high-risk areas and areas with

hazardous fuels build up thus reducing the possibility of large stand replacing fires and promoting fire resiliency.

2.5.5 Geological Resources

Impacts on geological resources would be minimal because the decision area is closed to future mineral development, and motorized vehicle use in the Monument would be limited to designated roads or prohibited under all alternatives. Potential impacts on unique geological features from recreation uses and increased visitor use would be reduced under Alternatives B and C and increased under Alternative D, compared with Alternative A.

2.5.6 Paleontological Resources

Under all alternatives, continuing to adhere to the existing laws, such as the Paleontological Resources Preservation Act, and BLM paleontological resource policies (for example, BLM manuals and handbooks) would protect paleontological resources. Increasing recreation at the Monument, expected under all alternatives, would increase potential for discovery, study, and damage to paleontological resources. Management actions promoting continued research and preservation of paleontological resources, which are common to all action alternatives, would have beneficial effects on paleontological resources within the decision area.

2.5.7 Soil Resources

The potential impacts on soils and biological soil crusts from recreation use would be reduced under Alternatives B and C and increased under Alternative D when compared with Alternative A. The action alternatives would emphasize inventorying and monitoring of soil resources and protection of sensitive soils and provide more flexibility to adjust management when soils are adversely affected. Compared with Alternative A, this would reduce the erosion potential on susceptible soils and biological soil crusts from recreation uses, livestock grazing, vegetation treatments, and prescribed fire.

2.5.8 Cave and Karst Resources

Cave ecosystems, cave-dependent species, and cave resources, including cultural and paleontological resources, are primarily affected by Monument users entering and recreating within caves. Alternative B would provide the greatest reduction in impacts by directing the BLM to close caves with suitable bat habitat to all non-permitted use, except traditional Tribal use.

Karst areas are typically affected by the development of infrastructure occurring on the karst formations. No infrastructure development on known karst formations is proposed or anticipated to occur under any of the alternatives.

2.5.9 Water Resources

Under the alternatives, the BLM would emphasize management actions that protect natural watershed function and ecosystem characteristics. Under Alternative A, water resource management would continue to emphasize water rights and watershed management specifically related to water quality and sediment yields. Alternative B would administer the most protection for water resources by focusing on resource preservation and conservation; it would meet and move toward riparian and upland land health standards, protect and restore watershed functionality and resiliency, and include mitigation of nonpoint source pollution impacts on receiving streams outside the Monument, improvements to soil characteristics to increase infiltration, reduction of runoff, and promotion of desired vegetation communities. Alternative C

would provide intermediate protection for water resources with less protection than Alternative B but more than Alternative A, to balance the protection of water resources with resource uses, such as recreation, vehicle use, and livestock grazing. Alternative D would prioritize resource uses while protecting water resources to maintain ecological function and to meet land capability.

All action alternatives include more management actions that address the potential impacts on water resources and the proper care and management of relevant Monument objects and values compared to Alternative A. Impacts on water resources due to livestock grazing, special designations, and vegetation treatments would not differ substantially across the action alternatives. With the fewest restrictions on travel and recreation and the fewest designated areas, Alternative D would provide the least protection of water resources of all the action alternatives. With the most travel restrictions, Alternative B would provide the most protection of water resources.

2.5.10 Air Quality

The primary source of particulate matter emissions would be from recreation and travel management (99 percent). Impacts from particulate matter emissions are localized and occur along unpaved surfaces and roads. Particulate matter emissions are expected to be reduced locally in larger areas under Alternatives B and C with more travel management restrictions and additional requirement compared with Alternatives A and D. However, recreational uses, particularly those related to OHV travel, may be concentrated more within the open areas in the planning area, increasing localized impacts on air quality in those areas.

2.5.11 Climate and Greenhouse Gases

Under all alternatives, recreation is expected to continue to grow, resulting in increased travel to the planning area and increased greenhouse gas emissions from such activities. While it is possible that more restrictive travel management under Alternatives B and C would result in lower overall activity within the Monument, resulting in reduced vehicular greenhouse gas emissions, restrictions have the potential to result in increased activities in other locations within the planning area, with total impacts remaining the same. Under all alternatives, livestock grazing would be the dominant source of greenhouse gas emissions in the Monument due to the higher global warming potential of methane. Implementation of prescribed fires under the action alternatives would reduce the potential for occurrences of severe uncontrolled wildfires. Therefore, while greenhouse gas emissions from prescribed fires would increase, the greenhouse gas emissions from wildland fires over the long term may be less, compared with Alternative A.

2.5.12 Cultural Resources

The Monument includes a full range of cultural resources, but only a very small portion has been formally surveyed. Management as a Monument and existence of extensive areas managed as wilderness would preclude many activities that could otherwise impact cultural resources. Reducing or avoiding the potential for impacts on cultural resources under all alternatives depends largely on adhering to existing regulatory procedures for the consideration of effects on cultural resources. For example, Section 106 of the National Historic Preservation Act or the BLM and New Mexico State Historic Preservation Office Protocol Agreement (BLM/NMSHPO PA) and other agreements or protocols would be followed, as appropriate.

Increasing recreation demand at the Monument is expected under all alternatives, and increased recreational access is expected under all action alternatives. This would increase potential for inadvertent

incremental damage, casual collection of artifacts, or vandalism of cultural resources. Compared to Alternative A, under Alternatives B and C there are greater restrictions on motorized travel that would result in reduced potential for impacts on cultural resources' integrity from increased use or access. These travel related restrictions are greatest under Alternative B, while there are fewer restrictions under Alternative D compared to those under Alternative A.

2.5.13 Visual Resources

Under Alternative A, the BLM would continue to manage 89,861 acres in a manner that could allow activities that have an increased potential to change the visual quality in areas with high value (VRI Class II). There are no areas where the visual quality would be potentially allowed to degrade under Alternatives B, C, and D.

2.5.14 Livestock Grazing

Under all alternatives, acres available for grazing and AUMs would not change. Alternatives A and D would restrict grazing of domestic sheep and goats in bighorn sheep habitat while Alternatives B and C would eliminate grazing of domestic sheep and goats throughout the entire Monument. Eliminating the grazing of domestic sheep and goats would reduce the possibility of diseases being transmitted to big horn sheep. Other changes would promote management that reduces sedimentation and impacts to other resources like cultural resources and recreation, creating higher quality forage and landscape for livestock to be grazed on.

Presidential Proclamation 9131 provides the following regarding grazing on Organ Mountain-Desert Peaks National Monument lands:

Laws, regulations, and policies followed by the BLM in issuing and administering grazing permits and leases on lands under its jurisdiction shall continue to apply with regard to the lands in the Monument, consistent with the protection of the objects identified above.

To determine livestock grazing compatibility and the impacts grazing could exact on objects of scientific and historic interest protected in the Monument, with attention given to the enhanced land use conservation and preservation principles employed to develop land use plan allocations and resource management goals and objectives, the BLM Las Cruces District Office will perform thorough land health evaluations and grazing compatibility assessment(s) to develop appropriate grazing management guidance and decisions consistent with Presidential Proclamation 9131's direction to "preserve the objects of scientific and historic interest on the Organ Mountains-Desert Peaks lands."

The surveys and evaluations will be completed to establish the status of ecosystem structures, functions, or processes within a specified geographic area, to include watershed health analysis. Surveys and assessments will be performed by collecting, synthesizing, and interpreting land and watershed health status from observations, inventories, and long-term monitoring programs including the Assessment, Inventory, and Monitoring (AIM) strategy. The three standards of rangeland health identified in the January 12, 2001 Record of Decision *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management*³, hereby incorporated by reference, are: 1) the Upland Sites standard; (2) the Biotic Communities, including Native, Threatened, Endangered and Special Status Species standard; and (3) the

³ [Standards for Public Land Health and Guidelines for Livestock Grazing in New Mexico \(blm.gov\)](https://www.blm.gov/10000102/standards-for-public-land-health-and-guidelines-for-livestock-grazing-in-new-mexico)

Riparian Sites standard. The goal of these standards is to ensure in the short term and long term there will be beneficial impacts to water quality, riparian and terrestrial wildlife habitat, wildlife, riparian area functions, ecological processes, rangeland productivity and plant cover and diversity. In the long term, healthy public lands will be sustained both in amount and quality. Upon completion of these surveys and evaluations, the BLM will implement informed grazing management actions and decision making “consistent with the protection of objects of scientific and historic interest.”

How Will the Data be Used?

The livestock grazing compatibility surveys and evaluations will help the BLM: 1) ensure that significant progress is made toward achieving the standards for public land health, 2) evaluate grazing allotments for permit renewal, and 3) determine what level of livestock grazing is compatible with protection of the objects of scientific and historic interest identified in Presidential Proclamation 9131. Land Health Evaluations would be completed on grazing allotments prior to permit renewal and would include allotment field visits and a thorough evaluation of available data as described in the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* and regulatory guidance at 43 CFR Subpart 4180 et seq (*Fundamentals of Rangeland Health Standards and Guidelines for Grazing Administration*). The Monument Manager/Authorized Officer shall establish livestock grazing management practices informed by the livestock grazing compatibility surveys and evaluations in conjunction with Presidential Proclamation 9131 and other appropriate Federal laws, regulations, and agency policy.

2.5.15 Recreation

Under all alternatives, recreational use in the Monument would be managed under various SRMA designations. Alternatives B and C would increase the amount of primitive and quiet recreation opportunities, such as pedestrian uses, wildlife viewing, and equestrian use; however, motorized recreation opportunities would decrease due to additional closures to motorized travel (54 percent of the Monument under Alternative B and 52 percent under Alternative C, compared with 49 percent under Alternative A). Alternative D, which would close 48 percent of the Monument to motorized travel, would increase motorized recreation opportunities compared with Alternative A.

Restricting camping to 2 days at the Sierra Vista and Baylor Canyon trailheads under Alternative D would result in shorter stays at the Monument and allow more people to camp at these popular locations due to increased turnover. Prohibiting camping at the trailheads under Alternative B would result in increased demand to camp in other locations in or adjacent to the Monument. Under Alternative C, designation of areas open to overnight camping during implementation-level planning would allow for further site-specific examination of recreational needs to meet the demands for camping opportunities while maintaining public safety.

While the action alternatives would reduce opportunities for recreational shooting compared with Alternative A, they would improve public safety and reduce user conflicts in these popular recreation areas within the Monument. Visitors would have the opportunity to engage in recreational shooting on approximately 94 to 95 percent of the Monument under the action alternatives and 99 percent under Alternative A.

Access to the Organ Mountains Wilderness would improve under all action alternatives if the BLM acquired legal public access to Achenbach Canyon. Compared with Alternative A, access for recreationists

would be improved, and conflicts with private landowners would be reduced, under the action alternatives if the BLM acquired legal public access to the Sierra de Las Uvas Wilderness Area and the Picacho Peak area. Recreation in all these areas would increase due to these access improvements. Subsequent implementation-level recreation planning would further enhance user experiences and reduce conflicts under all alternatives.

2.5.16 Lands, Realty, and Cadastral Survey

Under all alternatives, the BLM would continue to exclude new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objectives, and values, or are mandated by law, per the Proclamation. Thus, the number of ROWs would remain static or increase only minimally. The minimal variation in acreage for ROW exclusion areas across all alternatives would have little effect on the BLM's ability to grant ROWs on BLM-administered lands. Since there would be minimal changes in existing conditions, all alternatives would have no adverse effects on land use authorizations and tenure.

2.5.17 Transportation and Access

Alternatives B and C would increase the acreage designated as closed for public motorized OHV access and decrease the acreage designated as limited to designated roads for public motorized OHV access when compared with Alternative A. This would reduce overall transportation access and entry to areas in the Monument more than under Alternative A. Alternative D would decrease the acreage designated as closed for public motorized OHV access and increase the total acreage designated as limited to motorized roads for public motorized OHV access when compared with Alternative A. This would increase access in certain areas of the Monument more than under Alternative A. No areas would be designated as open for cross-country public motorized OHV access under Alternative A or the action alternatives.

2.5.18 Special Designations

Under all alternatives, the Butterfield Overland NHT, the Kilbourne Hole NNL, and designated wilderness areas would remain the same. Impacts on certain resources in Kilbourne Hole NNL would change by alternative due to differing restrictions on OHV use and recreation. Impacts on the relevant and important values of existing and proposed ACECs would not vary substantially between alternatives that designate or undesignate them due to other protections from Proclamation 9131 and management of designated wilderness areas overlapping these areas. Under all action alternatives, the Robledo Mountains ACEC would be undesignated, situated within designated wilderness, ensuring continued protection of scenic, biological, paleontological, and cultural resources under Proclamation 9131 and required wilderness management. Alternative B would designate three new ACECs, with minimal impact differences compared with Alternative A. Alternative C impacts on proposed ACECs would be similar to Alternative A, safeguarding Doña Ana Mountains and Organ/Franklin Mountains ACECs despite a size reduction. Alternative D, with similar impacts on proposed ACECs, may pose increased biological impacts in the Organ/Franklin Mountains ACEC due to fewer restrictions. Despite these nuances, relevant and important values, including scenic, biological, and cultural aspects, remain protected through Proclamation 9131 management. Impacts on the resources in the Aden Lava Flow RNA would be the same under all alternatives, regardless of whether the RNA is designated or undesignated. This is because the RNA is entirely within designated wilderness.

2.5.19 Tribal Interests

Contemporary Tribes maintain connections to locations and resources within the Monument for traditional and spiritual uses. Reducing the potential for impacts on Tribal interests under any of the alternatives hinges upon continuing to honor the obligation to consult meaningfully with federally recognized Tribes during the planning process and for all undertakings that have the potential to impact Tribal interests. Based on the restrictions and resource protections under the alternatives, Alternative B would likely contribute the least to impacts on resources of importance to Tribes by ground-disturbing activities, increasing visitation, and broad changes to visual resources. Alternative C would likely be the next least impactful, followed by Alternative A, and then Alternative D, in that order.

2.5.20 Environmental Justice

Under all alternatives, there is no indication that any of the BLM actions proposed in any of the alternatives would cause disproportionate effects on minority and low-income populations in the planning area. All alternatives would work within the framework of the Monument's Proclamation. Monument designations have been shown to contribute to the regional economy and boost job creation, and the Monument is an economic driver for the study area, especially Doña Ana County. Positive economic contributions would occur under all alternatives and would represent a benefit for all communities, including environmental justice communities.

2.5.21 Social and Economic Conditions

Proposed management under all Alternatives would support continued economic contributions from grazing and recreation. No quantitative change to the level of recreation use or the quantity of local/nonlocal or day/overnight visitation can be estimated by alternative. As a result, economic contributions are the same across alternatives for recreation. Additionally, because AUMs do not vary across alternatives, livestock grazing economic contributions do not vary across alternatives. Based on current levels of use, a total of 392 jobs and \$12.3 million in labor income are supported by recreation and livestock grazing in the regional economy.

Recreation stakeholders who value more quiet recreation experiences would be most supported under Alternative B, followed by Alternative C. Alternative D would allow for more areas open to OHV use, and as such, would provide more support for those who value motorized recreation experiences. While a quantitative change in consumer surplus cannot be estimated by alternative, changes to OHV use could translate to increased visitation for OHV recreation under Alternative D, resulting in the potential for an increase in the value for motorized developed uses. Compared with Alternative A, Alternative B would result in potential increased visitor days and increased consumer surplus value for those pursuing more passive recreation, such as photography, wildlife viewing, picnicking, hiking, walking, running, and bicycling.

Compared with Alternative A, Alternatives B and C would impact the recreation experience and associated nonmarket value for those pursuing camping opportunities. Overnight camping at Sierra Vista and Baylor Trailheads would be prohibited under Alternative B, due to health and safety concerns, and would be limited to 2 days under Alternative C. Alternative B would remove opportunities for camping and thereby impact camping experiences, compared with Alternative A.

Compared with Alternative A, all action alternatives would provide for an enhanced recreation experience through construction of an interpretative center because the center would support opportunities to learn about the Monument.

Across alternatives, managing and maintaining the open spaces associated with wilderness, the NNL, and the NHT would continue to support values associated with natural amenities and open space, including specially designated lands. Because acres of protected areas would remain the same across all alternatives, management would provide continued open spaces that benefit adjacent property values.

Designated areas such as ACECs, SRMAs, wilderness areas, or other management that restricts certain activities, such as recreational use and ROW developments would also provide continued support for associated ecosystem services, such as biodiversity and habitat.

2.5.22 Public Safety

Management under the action alternatives would improve public safety by reducing user conflicts, particularly related to camping and recreational shooting near popular recreation areas, and by better addressing anticipated future risks from wildfire and increased visitation. Overall, impacts would be similar under all action alternatives except that Alternative B would provide the greatest reduction in potential conflicts between recreational shooting activities and other recreational uses.

Chapter 3. Affected Environment and Environmental Consequences

3.1 INTRODUCTION

This chapter describes the affected environment for the resources that the RMP is likely to affect, and the environmental consequences of the alternatives being evaluated in this draft RMP/EIS. As part of the planning process, the BLM developed the analysis of the management situation (AMS) report, which describes the baseline conditions in the planning area (BLM 2022a). Because the AMS describes the planning area in detail, this chapter incorporates the AMS by reference and includes new data or information obtained since the AMS was finalized. Each resource section also includes particular questions about how the alternatives would affect the resource (the BLM refers to these questions as “Issues” for analysis).

It is important to note that these issues for analysis are different from the planning issues identified in **Chapter 1**. The planning issues are based on challenges and opportunities associated with management of the Monument. They provide the framework for the goals, objectives, allocations, and management direction considered in the alternatives. The issues for analysis frame the discussion of relevant environmental consequences of the alternatives in terms of the specific aspects within each resource topic that may be affected by allocations and management direction in the alternatives.

Following the description of baseline conditions, the discussion of potential impacts under each resource or resource use provides the scientific and analytic basis for evaluating the potential impacts of each alternative described in **Chapter 2**. Plan-level decisions in this RMP establish allocations that identify the uses that are allowed, restricted, or prohibited on BLM-administered lands in the Monument. Due to the programmatic nature of the RMP alternatives, the timing and specific location of project-specific actions that could impact resources are not defined. Additionally, the relationship between cause (future actions) and effect (impact on resources) is not always known or quantifiable. For these reasons, the analysis of alternatives contained in the sections below is both qualitative and quantitative. Each resource area includes an analysis of impacts for the no action and three action alternatives.

Impacts for resources would be confined to the BLM-administered surface estate, as Proclamation 9131 closed the Monument to development of federal mineral estate. Some BLM management actions may affect only certain resources under certain alternatives. The impact analysis identifies impacts that may enhance or improve a resource as a result of management actions, as well as those impacts that have the potential to impair a resource. However, the evaluations are confined to the actions that have direct, immediate, and more prominent effects. If an activity or action is not addressed in a given section, no impacts are expected, or the impact is expected to be negligible based on professional judgment.

The BLM manages public lands for multiple uses in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA). The BLM makes land use decisions to protect the resources while allowing for different uses of those resources, such as off-highway vehicle (OHV) use, recreation, and livestock grazing. When there are conflicts among resource uses or when a land use activity could result in unacceptable or irreversible impacts on the environment, the BLM may restrict or prohibit some land

uses in specific areas. To ensure the BLM meets its multiple-use mandate in land management actions, the alternatives' impacts on resource uses are identified and assessed as part of the planning process. The projected impacts on land use activities and the environmental impacts of land uses are characterized and evaluated for each alternative.

Appendix B, Approach to the Environmental Analysis, details the methods and assumptions for assessing impacts specific to each resource, including the indicators used for the analysis.

Appendix B also outlines the general methodology used for analyzing direct, indirect, and cumulative impacts predicted to result from implementing the alternatives presented in **Chapter 2**:

- Direct impacts are caused by an action or implementation of an alternative and occur at the same time and place.
- Indirect impacts result from implementing an action or alternative, but they usually occur later in time or are removed in distance and are reasonably certain to occur.
- Cumulative impacts are effects on the environment that result from the impact of implementing any one of the RMP alternatives in combination with other actions outside the scope of this RMP. Because the total effect of any single action cannot be determined by considering it in isolation, the BLM has determined the total effect by considering the likely result of that action in conjunction with many others. These assessments involve determinations that often are complex and, to some degree, subjective. **Appendix B** includes details on the cumulative effects area considered for each resource and resource use. **Table 3-1** below, provides a list of the reasonably foreseeable future actions that the BLM considered within the cumulative impact analysis.

Table 3-1
Reasonably Foreseeable Future Actions

Facility or Unit Name	Reasonably Foreseeable Action	Estimated Fiscal Year
Dripping Springs Natural Area	Dripping Springs Cattle Guard Replacements	2025
Dripping Springs Natural Area	La Cueva Trail and amphitheater American with Disabilities Act Improvement (hardening the surface of La Cueva trail from the visitor center along the straightaway)	Unknown
Dripping Springs Natural Area	Dripping Springs road fee booth and road widening	Unknown
Dripping Springs Natural Area	Maintenance to historic structures	Unknown
Dripping Springs Natural Area	Replace vault toilet at the south end of Dripping Springs trail	Unknown
Dripping Springs Natural Area	Lower La Cueva Trailhead parking (maintenance to reduce erosion)	Unknown
Dripping Springs Natural Area	Improve overflow parking near the visitor center	Unknown
Sierra Vista Trailhead-Sierra Norte	Improve the access road to the trailhead	Unknown
Cox Visitor Center and Compound	Cox Visitor Center Remodel, Phase 1 of 2 (external building remodel)	2027
Cox Visitor Center and Compound	Cox Visitor Center Remodel, Phase 2 of 2 (internal building remodel and exhibit installation)	2028
Soledad Canyon Day Use Area	Soledad Trailhead Retaining Wall, Curbing, and Sidewalks	2026
Soledad Canyon Day Use Area	Soledad Trailhead Vault Toilet	2026

Facility or Unit Name	Reasonably Foreseeable Action	Estimated Fiscal Year
Soledad Canyon Day Use Area	Soledad Trailhead Picnic Units, American with Disabilities Act Trail Accessibility, and Equestrian Trail	2027
Aguirre Spring National Recreation Area	Aguirre Spring and La Cueva Windscreens and Vault Toilet Door Repairs	2025
Aguirre Spring National Recreation Area	Federal Lands Transportation Project - Aguirre Spring National Recreation Area road improvements	Unknown
Aguirre Spring National Recreation Area	Replace box culverts in campground area	Unknown
Organ Mountains-Desert Peaks National Monument	Desert Peaks Interpretive Center	Unknown
Organ Mountains-Desert Peaks National Monument	San Agustin Pass Overlook American with Disabilities Act trail	Unknown
Organ Mountains-Desert Peaks National Monument	Improve trailheads and future acquired lands to meet public-use demands	Unknown

3.1.1 Resources and Issues Not Analyzed in Detail

- With the passage of the John D. Dingell Jr. Conservation, Management, and Recreation Act of 2019 (Dingell Act), most of the wilderness study areas identified in the Mimbres RMP were designated as wilderness and the areas that were not included in the wilderness boundaries were released from further wilderness consideration. No additional areas of the Monument meet the size criterion to be considered as a wilderness study area. For this reason, lands with wilderness characteristics are not considered further in this planning effort. See Section 2.1.4 of the AMS for more detail (BLM 2022a).
- Under Presidential Proclamation 9131, all minerals are withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition in the Monument. Mineral development would be allowed only for mining claims and mineral leases that predated the Presidential Proclamation. However, no mining claims or mineral leases are known to exist in the Monument. See Sections 2.2.2 and 3.14, Minerals (leasable, locatable, salable) of the AMS for more detail (BLM 2022a). Additionally, Proclamation 9131 closed the Monument to casual collection of minerals, petrified wood, and common non-vertebrate fossils. Because management of and impacts on minerals would not change by alternative, this resource topic is not analyzed in detail in this RMP/EIS.
- The BLM LCDO completed a Wild and Scenic River Eligibility Determination in 2012, which encompassed lands within the Monument. Eight river segments in the Las Cruces District were identified for the wild and scenic river inventory; none of them fall within the Monument. Because the Monument does not contain any eligible river segments, this resource topic is not analyzed in detail in this RMP/EIS.

3.2 FISH, WILDLIFE, AND HABITAT

3.2.1 Key Points

- The establishment of specially designated areas and special recreation management areas (SRMAs) would restrict certain activities that could affect standard habitat sites important for wildlife. Under Alternative B, the BLM would manage the largest acreage of specially designated areas and SRMAs that overlap standard habitat sites. Because of restrictions and limitations associated with these management areas, impacts on fish, wildlife, and habitat would be reduced under Alternative B.

- Right-of-way (ROW) exclusions would limit infrastructure that would affect habitat and wildlife species. Alternative B contains the largest number of acres that would exclude ROWs; therefore, it would affect species and habitats less than other alternatives.

3.2.2 Affected Environment

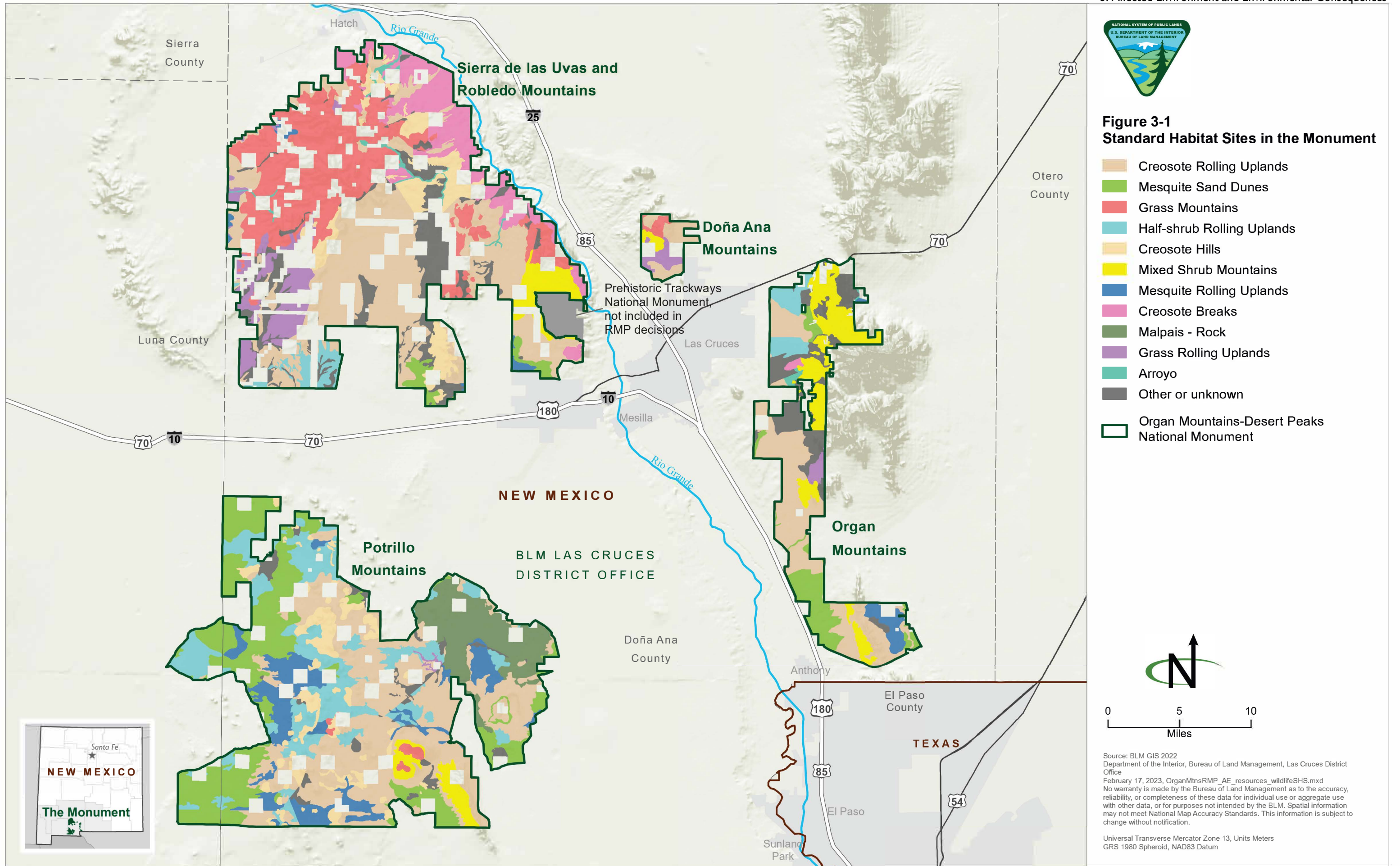
BLM standard habitat sites (SHSs) are an indicator used for fish, wildlife, and habitat to assess habitat quality and to identify and monitor specific issues at the landscape level, rather than on a species-by-species approach.

The BLM designed the SHS system to assist in accumulating, storing, retrieving, and analyzing data on wildlife, vegetation, and other ecosystem determinants as they relate to wildlife resources. The BLM-based SHSs are used as indicators because they provide the best available data on the current condition, trends, and forecasts of fish, wildlife, and habitat. Each SHS contains unique features, such as vegetation, landforms, and soil types, that provide habitat for specific species. For example, the mixed shrub mountain SHS provides important cover and forage habitat for mule deer (*Odocoileus hemionus*). The BLM has identified 16 SHSs in the planning area (**Figure 3-1**, Standard Habitat Sites in the Monument): arroyo, creosote bush breaks, creosote bush hill/creosote bush rolling upland, grass flat, grass hill/grass rolling upland, grass mountain, half-shrub rolling upland, Malpais-rock/lava, mesquite rolling upland, mesquite sand dune, mixed shrub hill, mixed shrub mountain, mixed shrub rolling upland, oak draw, piñon-juniper grass mountain, and riparian. Specific habitat features of each SHS and species that use the habitats are discussed in detail in Sections 2.1.2 and 3.1, Fish, Wildlife, and Habitat, of the AMS (BLM 2022a).

Wildlife diversity and abundance are directly related to habitat diversity, availability, and quality. Habitat in the planning area has experienced loss and decline through livestock grazing, fire suppression, drought, climate change, and an increase in invasive species. Because of habitat degradation and fragmentation, wildlife can also experience declines in populations.

The most important trend affecting wildlife and habitat that will continue to influence the future condition of SHSs is the conversion of grassland SHSs to brush- and shrub-dominated SHSs. Multiple factors could hinder the return of grassland conditions to areas now dominated by creosote bush (*Larrea tridentata*) and mixed shrub species. As perennial grass cover is lost, shrubs such as creosote and mesquite (*Prosopis glandulosa*) begin to dominate the area. The ecological services provided by continuous perennial grass cover are lost and erosion accelerates. This leads to the loss of surface soils and soil fertility, along with a decline in water infiltration and water-holding capacity, and a long-term decline in the seed bank. In many areas, the soil surface has eroded, and only a thin covering of gravel and stones remains.

These factors make the reestablishment of perennial grasses difficult. When grasses are able to germinate, herbivory pressure is high due to the lack of other palatable plants on the landscape; less palatable grasses become the dominant grass species. Changes in climate, such as reduced precipitation, also make it difficult for grass species to reestablish during the growing season. This will also cause shrubs and other nonnative species to establish, which reduces or completely inhibits the chances of grass species to reestablish in those areas.



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 February 17, 2023, OrganMtnsRMP_AE_resources_wildlifeSHS.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

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Multiple management areas with species' wildlife objectives are within the planning area. These areas would only be designated under Alternative A. However, the specific management direction for each area, including those directions for fish, wildlife, and habitat, would be retained through all action alternatives. These areas are:

- Doña Ana Mountains ACEC
- Organ/Franklin Mountains ACEC
- Robledo Mountains ACEC
- Aden Lava Flow Wilderness
- Broad Canyon Wilderness
- Cinder Cone Wilderness
- East Potrillo Mountains Wilderness
- Mount Riley Wilderness
- Organ Mountains Wilderness
- Potrillo Mountains Wilderness
- Robledo Mountains Wilderness
- Sierra de las Uvas Wilderness
- Whitehorn Wilderness
- Aden Lava Flow Research Natural Area (RNA)

There is a riparian and aquatic habitat management plan that was developed for the Mimbres RMP. The Robledo Mountains also has a habitat management plan.

Additional information regarding the objectives for wildlife in these areas is available in Sections 2.1.2 and 3.1, Fish, Wildlife, and Habitat, of the AMS (BLM 2022a).

3.2.3 Environmental Consequences

Issue 1: How would the quality and quantity of SHSs for general fish and wildlife species be affected by designated areas, recreation areas, motorized use, and ROW allocations?

Summary of Analytical Methods

The following analysis reviews the impacts each proposed alternative would have on SHSs for fish and wildlife. BLM SHSs are an indicator used for fish, wildlife, and habitat to assess habitat quality and to identify and monitor specific issues at the landscape level, rather than on a species-by-species approach. Differences in each alternative have the potential to impact vegetation communities, soils, and other ecosystem components that directly influence SHSs. Impacts on SHSs would largely be associated with surface-disturbing activities such as recreation and ROW allocations. These impacts could alter habitat suitability for some fish and wildlife.

The establishment of specially designated areas and ROW avoidance and exclusion areas would contribute to the protection of SHSs. The establishment of SRMAs, on the other hand, would protect habitat outside the designated area by concentrating recreational activities in those areas. This is because these areas contain specific restrictions on the timing, duration, and extent to which activities can occur. Comparisons are made between each alternative and their potential to impact SHSs.

Indicators

- Overlap of SHSs with designated areas, which would exclude or restrict some resource uses that would impact SHSs and therefore provide protection for these SHSs
- Overlap of SHSs with recreation areas, acres closed to motorized use, or ROW allocations, which could impact the quality or quantity of SHSs

Assumptions

- SHSs that are within designated areas, such as ACECs, SRMAs, or designated wildernesses, would have fewer impacts due to certain restrictions, such as limited motorized use. Therefore, these restrictions would reduce impacts on species that use the associated SHS.
- An increase in recreational use or ROW development will increase disturbance to the SHS used by wildlife. Motorized use can impact soils and vegetation and alter habitat characteristics that may influence the suitability for some species.

Impacts Common to All Alternatives

Impacts common to all alternatives would largely be associated with the degradation and fragmentation of SHSs. Although multiple uses such as livestock grazing and wildland fires can impact vegetation communities, recreational uses, as described in **Section 3.16.2**, Recreation, *Affected Environment*, would likely impact SHSs more. This is because recreation occurs throughout the planning area and degrades vegetation communities through soil disturbance, trampling, plant removal, increased fugitive dust, and the introduction and spread of noxious and invasive weeds. Additionally, utilization monitoring, land health assessments, and indicators of rangeland health would reduce the potential that permitted AUMs would lead to the degradation of wildlife habitat.

Noxious and invasive weeds can outcompete native vegetation that wildlife rely on for food and shelter and can cause previously suitable habitat to become unsuitable if proliferation is extensive. Travel management actions that create new routes and trails for horseback and pedestrian travel could increase fragmentation in the affected areas; conversely, actions that reclaim routes and trails would decrease fragmentation. Fragmentation can influence habitat suitability for species that require large, contiguous habitats.

Disturbances in riparian areas can cause erosion and sedimentation, reducing the overall aquatic ecosystem health. Impacts on water resources would affect a variety of wildlife species, including fully aquatic species such as fish as well as terrestrial species that rely on water throughout their life cycles, such as birds, mammals, amphibians, and reptiles. Impacts from a variety of uses, including recreation, vegetation management, infrastructure development and maintenance, and grazing, can all impact water resources. Typical impacts include sedimentation, bank destabilization, water quality degradation, water quantity fluctuations, and erosion. Specific impacts on water resources are discussed in **Section 3.10**.

Impacts from changing climate patterns, such as increases in temperature and changes in precipitation patterns, will continue to impact vegetation communities in the Monument and therefore affect wildlife species that rely on those habitats. As described in **Section 3.2.2**, climate change likely exacerbates the loss of grassland SHS to brush- and shrub-dominated SHSs.

Alternative A (No Action Alternative)

Specially designated areas under Alternative A, including ACECs, wilderness areas, national historic trails, national natural landmarks (NNLs), and RNAs, would total approximately 317,707 acres. Approximately 317,250 acres (55.3 percent of the planning area) of SHSs would fall within these designated areas (**Table 3-2**). As described in **Section 3.19.2**, these areas provide protection by limiting or restricting activities that could impact natural resources. Specifically, the Organ/Franklin Mountains ACEC has been designated to protect multiple special status species. The designation of this ACEC would also beneficially affect other wildlife species by protecting habitat used by a broader suite of wildlife species.

**Table 3-2
Standard Habitat Sites in Specially Designated Areas for Alternative A**

Specially Designated Areas	Acres	Acres of SHSs in Specially Designated Areas
ACEC	64,073	63,714
Designated wilderness	239,596	239,497
NHT	4,842	4,842
NNL	5,460	5,460
RNA	3,736	3,737
Total	317,707	317,250

Source: BLM GIS 2022

Under Alternative A, two SRMAs occur within the Organ Mountains and Doña Ana Mountains units—the Organ/Franklin Mountains SRMA (52,240 acres) and the Doña Ana Mountains SRMA (7,284 acres). In these areas, rules and guidelines would continue to limit or control activities through specialized management tools, such as designated campsites, permits, area closures, and limitations on the number of users, the duration of use, and the types of events. In addition, a recreation area management plan would be developed to guide recreation.

Under Alternative A, approximately 59,199 acres (10.3 percent of the planning area) of SHS would be within these two SRMAs (BLM GIS 2022). Because SRMAs concentrate recreation and limit impacts from dispersed recreation, the impacts on SHSs would be reduced in these areas. Additionally, approximately 242,889 acres would continue to be closed to motorized vehicle use under Alternative A. Wildlife would benefit from these closures by the reduced indirect impacts on SHSs from motorized vehicles, such as soil compaction, erosion, and sedimentation.

Under Alternative A, approximately 210,046 acres of SHSs would continue to be within designated ROW avoidance areas and 286,042 acres of SHSs in designated ROW exclusion areas. These areas, as described in **Section 3.17.2**, would limit or prohibit ROW developments. Because most of the planning area would be in either avoidance or exclusion areas (86.5 percent), there would continue to be limited habitat fragmentation of SHSs due to ROW development. This would benefit most wildlife species, specifically species that require large, undisturbed habitats such as big game and large mammals.

Action Alternatives (Alternatives B through D)

For each action alternative, the designated wilderness, NNLs, RNAs, and national scenic and historic trails acreage would remain the same. Compared with Alternative A, Alternative B would contain more acres of ACECs, and Alternatives C and D would contain fewer acres of ACECs. Alternative D would not establish any ACECs (**Table 3-3**). Despite the difference in ACEC acreage, protections afforded to SHSs from ACECs would not differ substantially across alternatives because allowable uses would be similar regardless of the total ACEC acreage. The exception would be in the Doña Ana Mountains ACEC, which would be closed to OHV use under Alternative B. Because of this, SHSs would be more protected in this area under Alternative B, when compared with Alternative A and the other alternatives.

**Table 3-3
Acres of Specially Designated Areas for All Action Alternatives**

Specially Designated Area Type	Acres	Acres of SHSs in Specially Designated Areas
Alternative B		
ACEC	71,358	71,047
Designated wilderness	239,596	239,497
National historic trail	4,842	4,842
NNL	5,460	5,460
RNA	0	0
Total	321,256	320,846
Alternative C		
ACEC	38,085	37,801
Designated wilderness	239,596	239,497
National historic trail	4,842	4,842
NNL	5,460	5,460
RNA	0	0
Total	287,983	287,601
Alternative D		
ACEC	0	0
Designated wilderness	239,596	239,497
National historic trail	4,842	4,842
NNL	5,460	5,460
RNA	0	0
Total	249,898	249,800

Source: BLM GIS 2022

Acres within SRMAs would vary by each action alternative (**Table 3-4**). Across all alternatives, Alternative B would have the most acres of SRMAs, followed by Alternative A. These alternatives would reduce the impacts on SHSs by limiting certain recreational activities that could alter vegetation. Alternatives C and D would have the fewest acres of SRMAs, when compared with Alternative A. Without restrictions associated with SRMAs, recreation under these alternatives would have more impacts on SHSs, compared with Alternatives A and B.

Acres of lands and realty ROW allocations would vary by each action alternative (**Table 3-5**). Compared with all alternatives, Alternative B would have the most acres of SHSs that overlap ROW exclusion areas; therefore, it would have the lowest potential for impacts on SHSs. Compared with Alternative A, all action alternatives would have more acres of SHS overlap with avoidance areas. Alternative B would have the

**Table 3-4
Acres of Standard Habitat Sites in Special Recreation Management Areas by Alternative**

Alternative	SRMA Acres	Acres of SHSs in SRMAs
Alternative B	66,348	66,037
Alternative C	45,871	45,586
Alternative D	7,284	7,281

Source: BLM GIS 2022

**Table 3-5
Acres of ROW Allocations and Exclusion Areas and Overlap of Standard Habitat Sites for All Action Alternatives**

Alternative	ROW Avoidance Acres	ROW Exclusion Acres	SHS in Avoidance Areas (Acres)	SHS in Exclusion Areas (Acres)
Alternative B	208,421	288,169	208,314	287,774
Alternative C	210,094	286,497	209,974	286,114
Alternative D	251,534	245,057	251,130	244,957

Source: BLM GIS 2022

highest overlap of SHS and exclusion areas and approximately 1,732 acres more overlap compared with Alternative A. Therefore, Alternative B would protect the largest amount of SHS. Of all alternatives, Alternative D would have the least overlap of SHSs and ROW exclusion areas. Therefore, this alternative would have the highest likelihood that ROW developments would impact SHSs. Alternative C would fall in between Alternatives B and D in terms of the acreage of overlap; it would have the same acreage of overlap as Alternative A (**Table 3-5**).

Across all alternatives, Alternative B contains the most acres closed to motorized vehicle use (approximately 269,157 acres). Therefore, this alternative would protect the most acreage from impacts associated with motorized vehicle use, as described under *Impacts Common to All Alternatives*. Alternative C contains the second-most acres closed to motorized vehicle use (approximately 255,332 acres), followed by Alternative A (approximately 242,504 acres) and Alternative D (approximately 239,305 acres) (BLM GIS 2022). Because Alternative D contains the least acres closed to motorized vehicle use, impacts from vehicles to wildlife habitat such as trampling, introduction of invasive species, and fragmentation would be greater under this alternative.

Cumulative Impacts

The cumulative effects analysis area is the Monument. Ongoing activities within the Monument that can affect SHSs include road and trail construction, building and facility construction, and trail improvements. Impacts from reasonably foreseeable projects would be the same across all alternatives.

Planned projects in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on SHSs. These projects consist of rehabilitating existing roads, improving overall accessibility, maintaining trails, and maintaining existing infrastructure. In the short term, these projects could increase erosion during and after construction; degrade surrounding vegetation; disturb soil, which can lead to invasive weed spread; and impact aquatic ecosystems through erosion and sedimentation. However, because best management practices would be used before, during, and after construction, impacts on SHSs would be short term. Additionally, because these projects largely consist of improvements to existing infrastructure,

impacts would be confined to the road corridor or existing footprint and could improve some habitat conditions in the long term.

Issue 2: How would disturbance, avoidance, disruption of movement patterns, injury, and mortality directly impact general fish and wildlife species under each alternative?

Summary of Analytical Methods

The following analysis reviews the impacts each proposed alternative would have on fish and wildlife. BLM SHSs are an indicator used for fish, wildlife, and habitat to assess habitat quality and to identify and monitor specific issues at the landscape level, rather than on a species-by-species approach. The SHSs are used as a proxy for impacts on wildlife. Differences in each alternative have the potential to impact individual species and populations. Comparisons are made between each alternative and their potential to impact wildlife species.

Indicators

- Overlap of SHSs with specially designated areas that would provide protection for species that use these habitats.
- Overlap of recreational areas and ROW allocations with SHSs. These activities have the potential to impact wildlife species.

Assumptions

- Protections for other resources often have an incidental beneficial impact of protecting wildlife. Designated areas such as ACECs, SRMAs, or wilderness areas restrict certain activities, such as recreational use and ROW developments, that directly impact wildlife.
- Impacts on wildlife from displacement depend on the location, extent, timing, or intensity of the disruptive activity. Furthermore, impacts from displacement would be greater for wildlife species that have limited habitat or a low tolerance for disruption and disturbance.
- The establishment of nonnative, invasive grasses has a negative impact on native plant and animal species. Specifically, the establishment of nonnative grasses can increase the intensity and frequency of wildfires that can impact native vegetation and endemic wildlife species.
- Disturbances to wildlife and avoidance of areas would be detrimental. An increase in recreational use or ROW allocations will increase disturbance and avoidance of areas by wildlife. Avoidance of areas important to wildlife for life cycles, such as foraging, reproduction, and rearing areas, can cause individuals to forgo reproduction; cause individuals to avoid foraging, which can influence health; and impact the survival of offspring that may be more sensitive to impacts. Certain species are more vulnerable than others to human activities. Species are more sensitive to disturbances at certain times of the year (for example, during nesting, brooding, and rearing). Certain activities, such as motorized use, can impact species more than others. This is due to an increase in the associated noise and vehicles moving at high speeds that may, for instance, cause a flight response (Pagany 2020).

Impacts Common to All Alternatives

Impacts common to all alternatives include disturbance to wildlife species and habitat avoidance. These impacts would largely be associated with recreation, including hiking, camping, hunting, and fishing. Research has shown that wildlife responses to disturbances vary and can have detrimental impacts such

as altered behavior and reduced vigor, and they can affect reproduction success (Anderson 1995). Some species may adapt to disturbances over time and can recolonize disturbed habitats. Avoidance of areas important to wildlife for life cycles, such as foraging, reproduction, and rearing areas, can cause individuals to forgo reproduction; cause individuals to avoid foraging, which can influence health; and impact the survival of offspring that may be more sensitive to impacts.

Impacts are more likely to occur in easily accessible areas, where visitation would be high, and in areas open to intensive motorized use. Permanent infrastructure such as roads, trails, parking lots, and campgrounds can disrupt movement patterns and migration routes for many wildlife species. Impacts also include the potential for injury or mortality to wildlife, specifically from vehicle collisions.

Short-term noise (such as from vehicles) has been documented to cause physiological effects to some species, including increased heart rate, altered metabolism, and a change in hormone balance for a variety of wildlife species (Radle 2007). Determining the effect of noise is complicated because different species and individuals have varying responses, and certain species rely more heavily on acoustical cues than others (Radle 2007; Barber et al. 2011). Impacts would be both short and long term, depending on the type and source of the noise.

Acreage associated with specially designated areas would vary across all alternatives. However, for all alternatives, restrictions associated with these areas—where the restrictions would be implemented—would reduce the impacts on wildlife species from recreation. For example, concentrating recreational use in SRMAs would reduce impacts on many wildlife species outside of these designated areas. ROW avoidance and exclusion areas would also reduce impacts because less habitat would be removed, which would limit fragmentation and affect wildlife migration, and less vehicles and humans would be present that could cause conflict or injury.

Changes in the vegetation composition due to increased temperature and changes in precipitation patterns will likely impact habitat suitability for many species. These changes have already been documented in portions of the Monument. As previously described, grasslands converting to shrub communities will likely be the most dramatic change in the Monument. Because a multitude of wildlife species, such as migratory birds, big game species, small mammals, and reptiles, rely on grassland communities, this trend toward shrub-dominated SHSs will impact species, populations, and entire ecosystems. Areas previously dominated by grasslands may become unsuitable for some species, which may result in the absence of species in some Monument areas.

Alternative A (No Action Alternative)

Approximately 317,250 acres (55.3 percent of the planning area) of SHSs would fall within specially designated areas (**Table 3-2**). The potential impacts on wildlife, as described in *Impacts Common to All Alternatives*, would be relatively low under Alternative A, since over half of the planning area that contains mapped SHS would fall into specially designated areas. Specific management associated with specially designated areas, such as restricting motorized use and implementing permitting systems, would reduce the impacts that these activities would have on wildlife species by limiting use in these areas. Limiting use could reduce impacts because less habitat would be removed, fewer vehicles and people would be present to cause conflict or injury, and less fragmentation of habitat would occur.

Under Alternative A, two SRMAs occur within the Organ Mountains and Doña Ana Mountains planning units—the Organ/Franklin Mountains SRMA (52,240 acres) and the Doña Ana Mountains SRMA (7,284 acres). In these areas, rules and guidelines would limit or control activities through specialized management tools such as designated campsites, permits, area closures, and limitations on the number of users, duration of use, and types of events. These specially designated areas concentrate impacts in one area and prevent impacts on the broader landscape from dispersed impacts. Therefore, impacts on wildlife within these areas would likely occur; however, these impacts would be concentrated, and overall impacts on wildlife would be reduced in other areas of the Monument. The overlap of SRMAs and SHSs under Alternative A would only constitute 59,199 acres (10.3 percent of the planning area) (BLM GIS 2022). This means the majority of SHSs would not have protections afforded under SRMAs.

Under Alternative A, the BLM would continue to designate approximately 210,152 acres as ROW avoidance areas and 286,439 acres as ROW exclusion areas. These areas, as described in **Section 3.17.2**, would limit or not allow ROW developments. Approximately 286,042 acres of ROW exclusion and 210,046 acres of avoidance would overlap SHSs (BLM GIS 2022). Because approximately half of the planning area would be in exclusion areas (49.9 percent), there would be limited impacts in these areas on wildlife from ROW developments.

Action Alternatives (Alternatives B through D)

Alternative B would have the highest overlap of SHSs and specially designated areas due to the higher number of acres in ACECs (**Table 3-3**). However, as described above, protections afforded to SHSs would not differ substantially across alternatives because allowable uses in ACECs would be similar regardless of the total ACEC acreage. The exception would be in the Doña Ana Mountains ACEC, which would be closed to OHV use under Alternative B. Because of this, SHSs would be more protected in this area under Alternative B, when compared with Alternative A and the other alternatives.

Across all alternatives, Alternative B would have the most acres of SRMAs, thereby concentrating impacts on wildlife species in these areas. Additionally, across all alternatives, Alternative B would have the most acres closed to motorized vehicles. Alternatives C and D would have the least acres of SRMAs. Without restrictions associated with SRMAs, recreation under these alternatives would have more impacts on wildlife compared with Alternative A; this is because these impacts could occur throughout the Monument and would not be as concentrated as they would be under Alternative B.

Compared with all alternatives, Alternative B would have the most acres of SHS that overlap ROW exclusion and therefore the lowest potential for impacts on wildlife species. Compared with Alternative A, Alternative B would have 1,732 more acres of SHS that would not be open to ROW development. A larger acreage of ROW exclusion areas would reduce effects on wildlife caused by altering movements or migration routes. Alternatives A and C would have relatively the same amount of ROW exclusion and avoidance areas; therefore, they would impact wildlife at the same level. Alternative D would have the lowest overlap of SHS with ROW avoidance areas; therefore, it would likely have the highest impacts on wildlife species.

Cumulative Impacts

The cumulative effects analysis area is the Monument. Impacts on wildlife species from reasonably foreseeable projects would include disturbance and avoidance during construction activities. Impacts would be from the noise associated with construction equipment, vehicles, and human presence during

construction. Vehicles and construction equipment can also cause injury or death by collisions. Because most projects are improving or maintaining existing infrastructure that does not provide suitable habitat for wildlife, it is expected that most species already avoid these areas. Therefore, the BLM would expect impacts to be relatively low. Impacts from reasonably foreseeable projects would be the same across all alternatives.

3.3 SPECIAL STATUS SPECIES

3.3.1 Key Points

- The establishment of specially designated areas and SRMAs would restrict certain activities that could affect special status species and their associated habitat. Under Alternative B, the BLM would manage the largest acreage of specially designated areas and SRMAs. Because of restrictions and limitations associated with these management areas, the impacts on special status species and habitat would be reduced under Alternatives B compared with under the other alternatives.
- ROW exclusions would limit infrastructure that would affect special status species and the associated habitat. Alternative B contains the largest number of acres that would exclude ROWs; therefore, Alternative B would affect special status species and habitats less than the other alternatives.

3.3.2 Affected Environment

Special status species are 1) species listed or proposed for listing under the Endangered Species Act (ESA), and 2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. There are no federally protected animal species and only one plant species, the Sneed's pincushion cactus (*Escobaria sneedii* var. *sneedii*), that exist in the planning area (**Table 3-6**).

BLM sensitive species are species occurring on BLM-administered land where the agency has the capability to significantly affect the conservation status of the species through management actions. The New Mexico BLM state director designates BLM sensitive species, with input from the New Mexico Department of Game and Fish (NMDGF) and the US Fish and Wildlife Service (USFWS). The BLM sensitive species list is reviewed and updated a minimum of every 5 years, per BLM Manual 6840 (BLM 2008) and IM 2009-039 (BLM 2009). Twenty-five BLM sensitive species have the potential to occur in the planning area (**Table 3-6**).

Birds of conservation concern are species that the USFWS has identified to be of particular concern. These species are also protected under the Migratory Bird Treaty Act (16 USC 703-12 and CFR 50 10.13). Twenty-two species of birds of conservation concern have the potential to occur in the planning area (**Table 3-6**). The potential for occurrences in the planning area were derived from the eBird database (Cornell Lab of Ornithology 2022) and may be limited for some species. For example, formal surveys conducted in Doña Ana County recorded aplomado falcons in six of 14 surveys in 2016. However, aplomado falcons are rarely observed within the Monument.¹ Additional protections are afforded for bald and golden eagles under the Bald and Golden Eagle Protection Act (16 USC 668–668c).

¹ Rachel Burke, BLM Las Cruces District Office wildlife biologist, personal communication with Luke Hodges, AECOM biologist, on June 29, 2022, regarding observations of BLM sensitive species.

Table 3-6
Special Status Species and Habitats that Have the Potential to Occur in the Planning Area

Species	Status*	Habitat
Aplomado falcon (<i>Falco femoralis septentrionalis</i>)	BLM sensitive species, bird of conservation concern	Grasslands
Peregrine falcon (<i>Falco peregrinus</i>)	Bird of conservation concern, SGCN	Open plains, mountainous areas
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BLM sensitive species, bird of conservation concern	Rivers, lakes, tall trees for nesting
Golden eagle (<i>Aquila chrysaetos</i>)	Bird of conservation concern	Cliffs and canyons
Ferruginous hawk (<i>Buteo regalis</i>)	Bird of conservation concern	Grasslands, desert scrub
Western burrowing owl (<i>Athene cunicularia</i>)	BLM sensitive species, bird of conservation concern, SGCN	Grasslands, desert scrub
Long-billed curlew (<i>Numenius americanus</i>)	Bird of conservation concern, SGCN	Grasslands
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	BLM sensitive species, bird of conservation concern, SGCN	Grasslands
McCown's longspur (<i>Calcarius mccownii</i>)	BLM sensitive species, bird of conservation concern, SGCN	Grasslands
Lark bunting (<i>Calamospiza melanocorys</i>)	Bird of conservation concern	Grasslands
Bell's vireo (<i>Vireo bellii</i>)	Bird of conservation concern, State threatened, SGCN	Shrublands, open woodlands
Sprague's pipit (<i>Anthus spragueii</i>)	BLM sensitive species, bird of conservation concern, SGCN	Grasslands
Virginia's warbler (<i>Oreothlypis virginiae</i>)	BLM sensitive species, bird of conservation concern, SGCN	Woodlands
Varied bunting (<i>Passerina versicolor</i>)	Bird of conservation concern	Scrublands
Painted bunting (<i>Passerina ciris</i>)	BLM sensitive species, bird of conservation concern	Scrublands
Baird's sparrow (<i>Ammodramus bairdii</i>)	BLM sensitive species, bird of conservation concern, state threatened	Grasslands
Black-chinned sparrow (<i>Spizella atrogularis</i>)	BLM sensitive species, bird of conservation concern, SGCN	Scrublands
Canyon towhee (<i>Melospiza fusca</i>)	BLM sensitive species, bird of conservation concern	Woodlands, open desert
Cassin's sparrow (<i>Aimophila cassinii</i>)	Bird of conservation concern	Grasslands
Grasshopper sparrow (<i>Ammodramus savannarum perpallidus</i>)	BLM sensitive species, bird of conservation concern	Grasslands
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	BLM sensitive species, bird of conservation concern, SGCN	Piñon- juniper woodlands
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Bird of conservation concern, SGCN	Grasslands, shrublands
Spotted bat (<i>Euderma maculatum</i>)	BLM sensitive species, State threatened, SGCN	High-elevation pine forests

3. Affected Environment and Environmental Consequences (Special Status Species)

Species	Status*	Habitat
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	BLM sensitive species, SGCN	Piñon-juniper woodlands, desert scrub
Sneed's pincushion cactus (<i>Escobaria sneedii</i> var. <i>sneedii</i>)	Federally endangered	Limestone slopes
Night-blooming cereus (<i>Peniocereus greggii</i>)	BLM sensitive species, State endangered	Desert flats
Sand prickly pear (<i>Opuntia arenaria</i>)	BLM sensitive species	Sandy areas, desert scrub
Roetter's hedgehog cactus (<i>Echinocereus roetteri</i>)	BLM sensitive species	Rocky slopes
Nodding cliff daisy (<i>Perityle cernua</i>)	BLM sensitive species, species of concern	Cliffs, rocky slopes
Doña Ana talussnail (<i>Sonorella todseni</i>)	BLM sensitive species	Desert, grasslands
Organ Mountains giant hyssop (<i>Agastache pringlei</i> var. <i>verticillata</i>)	BLM sensitive species, species of concern	High-elevation rugged slopes
Organ Mountains paintbrush (<i>Castilleja organorum</i>)	BLM sensitive species, species of concern	High-elevation rugged slopes
Organ Mountains evening primrose (<i>Oenothera organensis</i>)	BLM sensitive species, species of concern	Springs, moist canyons
Organ Mountains figwort (<i>Scrophularia laevis</i>)	BLM sensitive species, species of concern	High-elevation moist woodlands
Organ Mountains scaleseed (<i>Spermolepis organensis</i>)	BLM sensitive species, species of concern	Sandy areas, grasslands
Wind Mountain rockcress (<i>Boechera zephyra</i>)	BLM sensitive species	Rocky areas

Source: BLM GIS 2022

*SGCN: species of greatest conservation need

The primary indicator for special status species is the presence and continued existence of suitable habitat and the presence of individuals and sustainable populations. Many special status species depend on specific habitat features that may be limited in the planning area. For example, bat species rely on cliffs, caves, and crevices that provide suitable roosting habitat. Many of the special status plants are endemic to the Organ Mountains. Monitoring these micro-habitats can be used as an indicator for species that rely on these specific landscape features. Currently, multiple special status species are being monitored in the decision area, including the Sneed's pincushion and the sand prickly pear cactus.

Monitoring has shown changes in the distribution and amount of each SHS over time. These changes are a result of fire suppression, drought, flooding, livestock grazing, road construction, climate change, and the introduction of exotic, nonnative species. Areas now dominated by creosote bush and shrubs represent a transition away from reference plant communities as a result of these impacts. Each of these can affect habitat for various wildlife species by reducing or eliminating needed forage and cover availability, especially during nesting and rearing.

Additional information is available in Sections 2.1.3, Special Status Species, of the AMS (BLM 2022a).

3.3.3 Environmental Consequences

Issue 1: How would the quality and quantity of habitat for special status species be affected by special designations, recreation areas, motorized use, and ROW allocations within vegetation communities?

Summary of Analytical Methods

The following analysis reviews the impacts each proposed alternative would have on special status species and their associated habitats. Because habitats for special status species have not been mapped throughout the Monument, general vegetation communities are cross referenced with special status species habitat requirements to analyze impacts on the habitats and species. As described in **Section 3.4.2**, Vegetation Communities, within the Monument, the three main vegetation communities are Chihuahuan Desert scrub, Chihuahuan Desert grassland, and North American warm desert ruderal scrub and grassland.

Differences between the alternatives have the potential to impact these vegetation communities, soils, and other ecosystem components that directly influence special status species' habitats. Impacts on these habitats would largely be associated with surface-disturbing activities, such as recreation and ROW development. These impacts could alter habitat suitability for some species. The establishment of specially designated areas and ROW avoidance and exclusion areas would contribute to the protection of habitats; this is because these areas contain specific restrictions on the timing, duration, and extent that activities can occur. The establishment of SRMAs, on the other hand, would protect habitat outside the designated area by concentrating recreational activities in those areas. Comparisons are made between each alternative and their potential to impact vegetation communities as a proxy for impacts on special status species and their habitats.

Indicators

- Overlap of vegetation communities with specially designated areas that would provide protection for special status species that use these habitats
- Overlap of recreation areas, acres closed to motorized use, and ROW allocations with vegetation communities that could impact the quality or quantity of habitats

Assumptions

- Protections for other resources often have an incidental beneficial impact of protecting special status species' habitat. Designated areas, such as ACECs, SRMAs, or wilderness areas, restrict certain activities, such as recreational use and ROW developments, that directly impact wildlife.
- Impacts on special status wildlife from displacement depend on the location, extent, timing, or intensity of the disruptive activity. Furthermore, impacts from displacement would be greater for special status species that have limited habitat or a low tolerance for disruption and disturbance.
- Disturbances to special status species and habitat avoidance would be detrimental. An increase in recreational use or ROW allocations would increase disturbance and habitat avoidance. Certain species are more vulnerable than others to human activities. Species are more sensitive to disturbances at certain times of the year (for example, nesting, brooding, and rearing or the flowering period for annual forbs). Certain activities, such as motorized use, can impact species more than others. This is due to an increase in the associated noise and vehicles moving at higher speeds.

- Although grazing may impact SHSs, acres available to livestock grazing do not vary by alternative. However, recreation would continue to occur throughout the Monument. Therefore, recreation and the establishment of designated areas would have a greater impact on SHSs; therefore, recreation is analyzed in detail. Additionally, utilization monitoring, land health assessments, and indicators of rangeland health would reduce the potential that permitted AUMs would lead to the degradation of wildlife habitat.

Impacts Common to All Alternatives

Impacts on special status species common to all alternatives would be similar to those described in **Section 3.2.3, *Impacts Common to All Alternatives*** for fish, wildlife, and habitat. These impacts would be associated with the degradation and fragmentation of habitats by recreational uses, which degrade vegetation communities that special status species rely on through soil disturbance, trampling, removal of plants, increased fugitive dust, and the introduction and spread of noxious and invasive weeds. Travel management actions that reclaim routes and trails would decrease fragmentation while actions that create new routes and trails for horseback and pedestrian travel could increase fragmentation in the affected areas. Fragmentation can influence habitat suitability for species that require large, contiguous habitats. Disturbances in riparian areas can cause erosion and sedimentation, which impact the overall aquatic ecosystem health.

Because special status species often require habitat components that are more restrictive than general wildlife species, the impacts on special status species and their habitats can have greater impacts than general habitat. For example, cliffs and rocky slopes required for nodding cliff daisy (*Perityle cernua*) occur on only 0.6 percent of the Monument. Therefore, impacts on this habitat could have more severe effects on nodding cliff daisy and other species that require cliffs and rocky slopes than on species that use vegetation groups that make up a larger percentage of the Monument, such as grasslands.

Impacts from changing climate patterns, such as increases in temperature and changes in precipitation patterns, will continue to impact vegetation communities in the Monument; therefore, they will affect special status species that rely on those habitats.

Alternative A (No Action Alternative)

Under Alternative A, specially designated areas, including ACECs, wilderness areas, national historic trails, NNLs, and RNAs, would total approximately 317,707 acres. Approximately 101,928 acres of occupied and suitable special status plant species habitat would overlap specially designated areas (BLM GIS 2022). Protections afforded by special designations would allow the habitats to remain relatively undisturbed. For example, the Organ/Franklin Mountains ACEC has been designated to protect multiple special status species.

Desert grasslands would account for the largest vegetation community within specially designated areas (35 percent), followed by desert scrub (30 percent) and ruderal desert scrub (26 percent; **Table 3-7**). Because many special status species require grasslands or scrub/shrub habitats and these communities make up large portions of vegetation within specially designated areas, suitable habitat for many special status species, particularly migratory birds, would be protected.

**Table 3-7
Vegetation Communities in Each Special Designation for Alternative A**

Specially Designated Areas	Acres of Desert Scrub in Specially Designated Areas	Acres of Desert Grassland in Specially Designated Areas	Acres of Ruderal Desert Scrub and Grassland in Specially Designated Areas	Other Vegetation Communities in Specially Designated Areas	Total Acres of Specially Designated Areas
ACEC	32,117	9,872	7,126	14,892	64,006
Designated wilderness	57,611	94,667	71,453	15,573	239,305
National historic trail	1,898	1,902	662	239	4,701
NNL	2,125	930	2,405	0	5,460
RNA	0	3,286	449	0	3,736
Total	93,751	110,657	82,095	30,704	317,208

Source: BLM GIS 2022

Under Alternative A, two SRMAs occur within the Organ Mountains and Doña Ana Mountains planning units—the Organ/Franklin Mountains SRMA (52,240 acres) and the Doña Ana Mountains SRMA (7,284 acres). In these areas, management would limit or control activities through specialized management tools such as designated campsites, permits, area closures, and limitations on the number of users, the duration of use, and the types of events. In addition, a recreation area management plan would be developed to guide recreation. Most vegetation cover within these SRMAs would consist of desert scrub (64 percent; **Table 3-8**), which would provide suitable habitat for a variety of migratory birds, the Townsend’s big-eared bat (*Corynorhinus townsendii*), and the sand prickly pear (*Opuntia arenaria*). Approximately 37,756 acres of occupied and suitable special status plant species’ habitat would be within SRMAs under Alternative A (BLM GIS 2022).

**Table 3-8
Acres of Vegetation Types in Special Recreational Management Areas for Alternative A**

Alternative A	
Acres of desert scrub in SRMA	28,606
Acres of desert grasslands in SRMA	9,319
Acres of ruderal scrub and grassland in SRMA	6,710

Source: BLM GIS 2022

Alternative A would have approximately 242,889 acres closed to motorized use. These closures would benefit special status species’ habitats by reducing the impacts vehicles have on vegetation, including soil compaction, degradation, and erosion. Approximately 65,018 acres of occupied and suitable special status plant species habitat would occur within these closed areas. This would protect the Sneed’s pincushion cactus (*Coryphantha sneedii*), night-blooming cereus (*Peniocereus greggii*), sand prickly pear, and Roetter’s hedgehog cactus (*Echinocereus roetteri*).

ROW allocations under Alternative A would prohibit (approximately 66,625 acres) and restrict (approximately 82,183 acres) ROW development most in desert scrub vegetation communities (approximately 148,808 acres total) followed by grassland communities (87,123 acres avoidance, approximately 100,361 acres exclusion, approximately 187,484 acres total; **Table 3-9**). Impacts on

**Table 3-9
Acres of Vegetation Communities by ROW Allocation for Alternative A**

Alternative A	
Acres of desert scrub in ROW avoidance areas	66,625
Acres of desert scrub in ROW exclusion areas	82,183
Acres of desert grasslands in ROW avoidance areas	87,123
Acres of desert grasslands in ROW exclusion areas	100,361
Acres of ruderal scrub and grassland in ROW avoidance areas	39,358
Acres of ruderal scrub and grassland in ROW exclusion areas	81,210

Source: BLM GIS 2022

vegetation communities within these ROW exclusion areas would be eliminated while impacts within ROW avoidance areas would be reduced. Therefore, more acres within ROW exclusion areas would benefit special status species that use these habitats more than avoidance areas. These exclusions would benefit many special status species that require grasslands and scrub communities, such as migratory bird species.

Action Alternatives (Alternatives B through D)

The overall acres of designated wilderness, NNLs, and national scenic and historic trails would remain the same across all action alternatives (**Table 3-10**). Only ACECs would vary by alternative. Compared with Alternative A, Alternative B would contain more acres of ACECs, and Alternatives C and D would contain fewer acres of ACECs. Alternative D would not establish any ACECs (**Table 3-10**). Only the Organ/Franklin Mountains ACEC would have management prescriptions specifically for special status species; this is true under all alternatives.

**Table 3-10
Acres of Vegetation Communities in Each Special Designation for All Action Alternatives**

Specially Designated Area Type	Acres of Desert Scrub in Specially Designated Areas	Acres of Desert Grassland in Specially Designated Areas	Acres of Ruderal Scrub and Grassland in Specially Designated Areas	Other Vegetation Communities in Specially Designated Areas	Total Acres of Specially Designated Areas
Alternative B					
ACEC	34,998	12,625	9,073	14,215	71,911
Designated wilderness	57,611	94,667	71,453	15,573	239,304
National historic trail	1,898	1,902	662	239	4,701
NNL	2,125	930	2,405	0	5,460
RNA	0	0	0	0	0
Total	96,632	110,124	83,593	30,027	320,376

Specially Designated Area Type	Acres of Desert Scrub in Specially Designated Areas	Acres of Desert Grassland in Specially Designated Areas	Acres of Ruderal Scrub and Grassland in Specially Designated Areas	Other Vegetation Communities in Specially Designated Areas	Total Acres of Specially Designated Areas
Alternative C					
ACEC	20,835	3,991	6,909	6,165	37,900
Designated wilderness	57,611	94,667	71,453	15,573	239,304
National historic trail	1,898	1,902	662	239	4,701
NNL	2,125	930	2,405	0	5,460
RNA	0	0	0	0	0
Total	82,469	101,490	81,429	21,977	287,365
Alternative D					
ACEC	0	0	0	0	0
Designated wilderness	57,611	94,667	71,453	15,573	239,304
National historic trail	1,898	1,902	662	239	4,701
NNL	2,125	930	2,405	0	5,460
RNA	0	0	0	0	0
Total	61,634	97,499	74,520	15,812	249,465

Source: BLM GIS 2022

Despite the difference in ACEC acreage, protections afforded to special status species from ACECs would not differ substantially across alternatives; this is because allowable uses would be similar regardless of the total ACEC acreage. The exception would be in portions of the ACECs that close areas to OHV use or prohibit pets under the different alternatives. Alternative B would be the most protective because the Doña Ana Mountains ACEC would be closed to OHV use and pets would be prohibited in the Organ/Franklin Mountains ACEC. Because of this, habitats important for special status species would be more protected under Alternative B, when compared with Alternative A and the other alternatives.

However, because the locations of specially designated areas differ by alternative, some alternatives could protect vegetation types that would benefit specific special status species more than others. For example, Alternative B contains the most acres of specially designated areas, and 96,632 acres of desert scrub overlap these areas. Compared with Alternative A, this is approximately 2,881 more acres of desert scrub habitat. Therefore, species that require desert scrub habitats would likely benefit more under Alternative B when compared with Alternative A.

Compared with Alternative A, Alternative B would contain more acres of occupied and suitable special status plant species habitat within specially designated areas (approximately 107,341 acres, or 5,413 acres more than Alternative A). Therefore, this alternative would provide the most protection for these special status plant species. Conversely, Alternatives C and D would provide less protection for occupied and suitable special status plant species habitat because fewer acres of such habitat would fall within specially designated areas, compared with Alternative A. Alternative C would contain 87,440 acres of occupied and suitable special status plant species habitat within specially designated areas (14,488 acres less than Alternative A), while Alternative D would contain 62,407 acres of occupied and suitable special status

plant species habitat within specially designated areas (39,521 acres less than Alternative A) (BLM GIS 2022).

Across all alternatives, Alternative B would contain the most acres of desert scrub and desert grasslands within SRMAs (**Table 3-11**). Alternative B would have approximately 3,440 more acres of desert scrub and 721 more acres of desert grassland in SRMAs than Alternative A. Therefore, Alternative B would provide more protection to these vegetation communities as compared with Alternative A. Alternative C would contain fewer acres of both desert scrub and desert grasslands within SRMAs, compared with Alternative A; therefore, it would provide less protection to these vegetation communities. Because the Doña Ana Mountains SRMA would not be designated under Alternative D, only 4,912 total acres of desert scrub, desert grasslands, and ruderal scrub would be protected by SRMAs, compared with 44,635 total acres under Alternative A (**Table 3-8**). Therefore, Alternative D would provide less protection to these vegetation communities as compared with Alternative A. Because SRMAs concentrate recreational use and limit impacts from dispersed recreation, alternatives with fewer acres designated as SRMAs would have impacts distributed across the entire Monument.

Table 3-11
Acres of Vegetation Communities in Special Recreation Management Areas by Alternative

Acres	Alternative B	Alternative C	Alternative D
Acres of desert scrub in SRMAs	32,046	27,988	4,291
Acres of desert grasslands in SRMAs	10,040	4,798	206
Acres of ruderal scrub and grassland in SRMAs	7,947	7,767	415

Source: BLM GIS 2022

Compared with Alternative A, approximately 26,800 more acres would be closed to motorized vehicle use under Alternative B; therefore, Alternative B would reduce impacts on special status species’ habitat from motorized vehicle use as compared with Alternative A. Alternative C, which would close 13,000 more acres to motorized use than Alternative A, would similarly reduce impacts compared with Alternative A. Conversely, Alternative D would close 3,199 fewer acres to motorized use than Alternative A; this would increase impacts on special status species’ habitat as compared with Alternative A (BLM GIS 2022).

ROW allocations vary across each alternative and across the three main vegetation communities found in the Monument (**Table 3-12**). Because most special status species, specifically avian species, require grassland or shrub habitats, these species would benefit the most from ROW exclusions in these habitats. Alternatives A, B, and C contain similar acreage of ROW exclusions (263,755 acres, 264,936 acres, and 263,675 acres, respectively) and would have similar impacts on habitats. Alternative D contains the least amount of exclusion acres (approximately 229,191 acres) and would have less protection for these vegetation communities as compared with Alternative A.

Table 3-12
Acres of Vegetation Communities and ROW Allocations for All Action Alternatives

Acres	Alternative B	Alternative C	Alternative D
Acres of desert scrub in ROW avoidance areas	66,356	66,642	89,071
Acres of desert scrub in ROW exclusion areas	82,452	82,165	59,736
Acres of desert grasslands in ROW avoidance areas	83,939	87,184	89,505

Acres	Alternative B	Alternative C	Alternative D
Acres of desert grasslands in ROW exclusion areas	101,244	100,300	95,597
Acres of ruderal scrub and grassland in ROW avoidance areas	39,329	39,358	46,780
Acres of ruderal scrub and grassland in ROW exclusion areas	81,240	81,210	73,858

Source: BLM GIS 2022

Cumulative Impacts

The cumulative effects analysis area is the Monument. Ongoing activities in the Monument that can affect special status species' habitats include road and trail construction, building and facility construction, and trail improvements. Impacts from reasonably foreseeable projects would be the same across all alternatives.

Planned projects in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on special status species' habitats. These projects consist of rehabilitating existing roads, improving overall accessibility, maintaining trails, and maintaining existing infrastructure. These projects could increase erosion after construction; degrade surrounding vegetation; disturb soil, which can lead to invasive weed spread; and impact aquatic ecosystems through erosion and sedimentation. However, because best management practices would be used before, during, and after construction, impacts on special status species' habitats would be short term. Additionally, because these projects largely consist of improvements to existing infrastructure, impacts would be confined to the road corridor or existing footprint.

Issue 2: How would disturbance, avoidance, disruption of movement patterns, injury, and mortality directly impact special status species?

Summary of Analytical Methods

The following analysis reviews the impacts each proposed alternative would have on special status species. Because comprehensive special status species' occupancy data are not available, habitat requirements of special status species are used to determine potential presence. Differences in each alternative have the potential to impact individual species and populations. Comparisons are made between each alternative and their potential to impact special status species.

Indicators

- Overlap of vegetation communities with specially designated areas that would provide protection for special status species that use these habitats
- Overlap of recreational areas and ROW allocations with vegetation communities. These activities have the potential to impact special status species

Assumptions

- Protections for other resources often have an incidental beneficial impact of protecting special status species' habitat. Designated areas, such as ACECs, SRMAs, or wilderness areas, restrict certain activities, such as recreational use and ROW developments, that directly impact special status species.

- Impacts on wildlife from displacement depend on the location, extent, timing, or intensity of the disruptive activity. Furthermore, impacts from displacement would be greater for wildlife species that have limited habitat or a low tolerance for disruption and disturbance.
- Disturbances to wildlife and avoidance of areas would be detrimental. An increase in recreational use or ROW allocations would increase disturbance and avoidance of areas by wildlife. Certain species are more vulnerable than others to human activities. Species are more sensitive to disturbances at certain times of the year (for example, nesting, brooding, and rearing). Certain activities, such as motorized use, can impact species more than others. This is due to an increase in the associated noise and vehicles moving at higher speeds (Pagany 2020).
- Although grazing may impact SHS, recreational activities and the establishment of designated areas would have a greater impact on SHS and are therefore analyzed in detail.

Impacts Common to All Alternatives

Impacts common to all alternatives include disturbance to special status species and habitat avoidance. These impacts would largely be associated with recreation, including hiking, camping, hunting, and fishing. Research has shown that wildlife responses to disturbances vary and can have detrimental impacts such as altered behavior, reduced vigor, and productivity (Anderson 1995). Some species may adapt to disturbances over time and could recolonize disturbed habitats. Impacts on special status plant species include trampling from foot traffic, vehicles, and during development of infrastructure. These impacts can lead to injury or mortality.

Impacts are more likely to occur in easily accessible areas, where visitation would be high, and in areas open to intensive motorized use. Permanent infrastructure such as roads, trails, parking lots, and campgrounds can disrupt movement patterns and migration routes for many species. Impacts also include the potential for injury or mortality to wildlife, specifically from vehicle collisions and trampling of plant species.

Short-term noise (such as from vehicles) has been documented to cause physiological effects, including increased heart rate, altered metabolism, and a change in hormone balance (Radle 2007). Determining the effect of noise is complicated because different species and individuals have varying responses. Also, certain species rely more heavily on acoustical cues than others (Radle 2007; Barber et al. 2011). However, noise is known to impact a variety of wildlife species and would be assumed to impact special status wildlife species to some degree. Impacts would be both short and long term, depending on the type and source of the noise.

Impacts from changing climate patterns, such as increases in temperature and changes in precipitation patterns, will continue to impact vegetation communities in the Monument; therefore, they will continue to affect special status species that rely on those habitats.

Alternative A (No Action Alternative)

Alternative A would continue to protect large portions of vegetation communities by restricting uses such as motorized vehicle use in specially designated areas (317,707 acres). Therefore, the potential impacts on special status species, as described in *Impacts Common to All Alternatives*, would be relatively low under Alternative A. This is because over half of the planning area would fall into specially designated areas. Specific management associated with specially designated areas, such as restricting motorized use and implementing permitting systems, would reduce the impacts these activities would have on special status species.

Under Alternative A, two SRMAs would continue to be managed within the Organ Mountains and Doña Ana Mountains planning units—the Organ/Franklin Mountains SRMA (52,240 acres) and the Doña Ana Mountains SRMA (7,284 acres). In these areas, rules and guidelines would limit or control activities through specialized management tools such as designated campsites, permits, area closures, and limitations on the number of users, duration of use, and types of events. These specially designated areas concentrate impacts in one area and prevent impacts on the broader landscape from dispersed uses. Therefore, impacts on special status species within these SRMAs would likely occur. However, these impacts would be concentrated, and the overall impacts on wildlife would be reduced in other areas of the Monument. Most vegetation cover within these SRMAs would consist of desert scrub (55 percent), which would provide suitable habitat for a variety of migratory birds, the Townsend’s big-eared bat (*Corynorhinus townsendii*), and the sand prickly pear (*Opuntia arenaria*).

Alternative A would continue to have approximately 242,889 acres closed to motorized use. These closures would benefit special status species’ habitats by reducing the impacts that vehicles would have on species, including disturbance and avoidance. Approximately 65,018 acres of occupied and suitable special status plant species habitat would occur within these closed areas, protecting the Sneed’s pincushion cactus (*Coryphantha sneedii*), night-blooming cereus (*Peniocereus greggii*), sand prickly pear, and the Roetter’s hedgehog cactus (*Echinocereus roetteri*).

Under Alternative A, approximately 210,152 acres would continue to be managed as ROW avoidance areas, and 286,439 acres would continue to be designated as ROW exclusion areas. These areas, as described in **Section 3.17.2**, would limit or exclude ROW developments. Because approximately half of the planning area would be in exclusion areas (49.9 percent), there would be limited impacts in these areas on special status species from ROW developments.

Action Alternatives (Alternatives B through D)

Alternative B would have the most acres of specially designated areas due to the higher number of acres in ACECs (**Table 3-10**). However, as described above, protections afforded to special status species would not differ substantially across alternatives because allowable uses in ACECs would be similar regardless of the total ACEC acreage. The exception would be in the Doña Ana Mountains ACEC, which would close the area to OHV use under Alternative B. Because of this, special status species would be more protected in this area under Alternative B, when compared with Alternative A and the other alternatives.

Alternative B would contain the most acres of desert scrub and desert grasslands within SRMAs (**Table 3-11**) out of all the alternatives. Alternative B would have approximately 3,440 more acres of desert scrub and 721 more acres of desert grassland compared with Alternative A. Alternative C would contain less acres of both desert scrub and desert grasslands within SRMAs, as compared with Alternative A (**Table 3-11**). Alternative B also would contain the most acres of occupied and suitable special status plant species habitat within SRMAs (approximately 40,875 acres) out of all the alternatives.

Under Alternatives B and C, the BLM would manage more acres as closed to motorized vehicle use (269,697 acres and 255,870 acres, respectively) when compared with Alternative A (242,889 acres). Therefore, these alternatives would have lower potential impacts associated with motorized vehicle use than Alternative A. Alternative D would contain fewer acres closed to motorized vehicle use (239,596 acres) compared with Alternative A (242,889 acres) and therefore more potential for impact (BLM GIS 2022).

ROW allocations vary across each alternative and across the three main vegetation communities found in the Monument (**Table 3-5**). Because most special status species, specifically avian species, require grassland or shrub habitats, these species would benefit the most from ROW exclusions in these habitats. Alternatives A, B, and C contain similar acreage of ROW exclusions (286,439 acres, 288,169 acres, and 286,497 acres, respectively). Therefore, Alternatives B and C would have similar impacts on special status species from ROW developments as compared with Alternative A. Alternative D contains the least number of acres of ROW exclusion areas (approximately 245,057 acres) and would therefore have the most potential for impacts, as compared with Alternative A.

Additional resource protections for special status species are associated with Alternative B. Grazing of domestic sheep and goats would not be allowed anywhere in the Monument. This restriction would mainly benefit bighorn sheep by reducing the possibility of livestock spreading diseases for which bighorn sheep do not have immunity. These diseases are largely associated with domestic sheep (*Ovis aries*) and goats (*Capra aegagrus hircus*) (USGS 2017).

Alternative B would also provide protection to special status plant species by prohibiting surface-disturbing activities in suitable special status plant species habitat (117,229 acres). Under Alternative C, these activities would be prohibited in known occupied special status plant species habitat, which would cover 167 acres. Alternatives B through D would also ensure that appropriate adaptive management, protections, and mitigations would be developed and applied by continuing to monitor and inventory special status species and their habitats throughout the Monument. This would include assessing the effects of climate change on species. Any future proposed surface-disturbing activities in suitable habitat would require surveys for special status species and appropriate mitigation. Vegetation treatments would be focused on maintaining or enhancing grasslands to ensure adequate diversity and cover to meet the habitat needs of grassland birds, specifically the aplomado falcon.

Cumulative Impacts

The cumulative effects analysis area is the Monument. Ongoing activities in the Monument that can affect special status species include road and trail construction, building and facility construction, and trail improvements. Impacts from reasonably foreseeable projects would be the same across all alternatives.

Planned projects in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on special status species. These projects consist of rehabilitating existing roads, improving overall accessibility, maintaining trails, and maintaining existing infrastructure. These projects would cause disturbance to species and avoidance of areas during construction. However, because best management practices would be used before, during, and after construction, impacts on special status species would be short term. If these projects were to occur in areas occupied by special status animal species, it is likely these species would return to occupy the area after construction was completed.

3.4 VEGETATION COMMUNITIES

3.4.1 Key Points

- The risk of introducing and spreading invasive plant species would be lowest under Alternative B and highest under Alternative D.
- Alternative D would have the fewest restrictions on recreation and travel management, and it would provide the most opportunity for recreational shooting. These would result in less

protection for vegetation and an increased potential for damage to vegetation by motor vehicles and trampling. Alternative B would offer the most protection for vegetation resources due to the acres that would be managed as SRMAs and ACECs and closed to surface disturbance from motorized activities and ROW development. Alternative B would be followed by Alternative C.

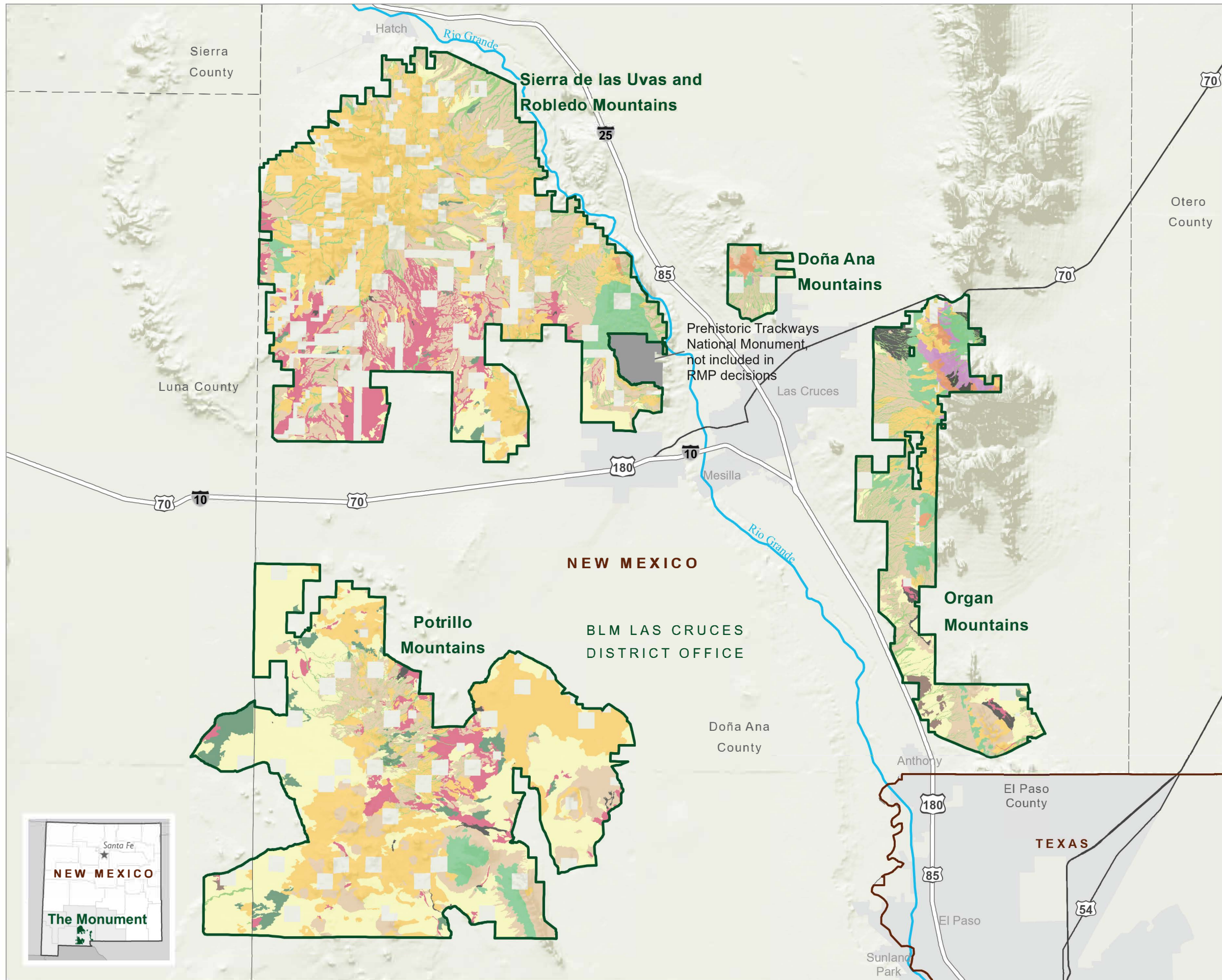
3.4.2 Affected Environment

The Monument lies in the northern part of the Chihuahuan Desert (major land resource area 42), in a semiarid climate. The main growing season is controlled by monsoonal rains; it runs, on average, from mid-July through October. If there is sufficient moisture, a secondary growing season occurs from January through March, but winter rains are unreliable. There is substantial variation between seasons and between years in percent cover and species composition, depending on precipitation. The Monument is subject to periodic severe droughts.

Approximately 900 plant species are known to occur in the Monument; four of these are new species described in the last decade. The density and diversity of the vegetation generally increases with elevation. Lower elevations (less than approximately 5,250 feet) are present in all four units of the Monument and have relatively sparse shrublands and grasslands dominated primarily by creosote bush (*Larrea tridentata*), honey mesquite (*Prosopis glandulosa*), or tobosa (*Pleuraphis mutica*). Intermediate elevations (to approximately 6,400 feet) are found in the Organ Mountains, Sierra de las Uvas, Robledo Mountains, and Doña Ana Mountains, and on Mount Riley. These are primarily juniper (*Juniperus* spp.) and grama (*Bouteloua* spp.) savanna, thornscrub dominated by acacia (*Vachellia* spp.) and catclaw mimosa (*Mimosa aculeaticarpa* var. *biuncifera*), or hairy mountain mahogany (*Cercocarpus breviflorus*), oak (*Quercus* spp.), and juniper woodlands. The highest elevations, limited to a small portion of the Organ Mountains, also have ponderosa pine (*Pinus ponderosa* var. *scopulorum*), oak, hairy mountain mahogany woodlands, and cliff and scree plant communities. Within this broad pattern, there is a high degree of local variation based on soils, the topographic position, and geology (BLM 2022a).

Vegetation communities were mapped based on the US National Vegetation Classification Standard (USNVC). Vegetation types and their areas are shown in **Table 3-13**. USNVC vegetation types are depicted in **Figure 3-2**, Vegetation Types in the Monument. A full description of these communities can be found in Section 2.1.4.2 of the AMS (BLM 2022a).

The BLM evaluated the current condition of vegetation in comparison with that described for the reference state in ecological site descriptions. Based on ecological state mapping using the index of departure, as described in the AMS (Section 2.1.4.1; BLM 2022a), 33.3 percent of the Monument is in the reference state, 9.8 percent is slightly departed from the reference state (index values 0.75 to 0.99), 37.5 percent is moderately departed (index values 0.5 to 0.749), 14.7 percent is highly departed (index values 0.25 to 0.49), and 4.7 percent is extremely departed (index values 0 to 0.249). The reference and slightly departed areas are generally on steep slopes or rough, rocky terrain that deters cattle. The moderately to extremely departed areas are generally on gentler, less rocky terrain that cattle easily traverse. The index of departure is shown in **Figure 3-3**, Vegetation Departure from Reference Condition in the Monument.



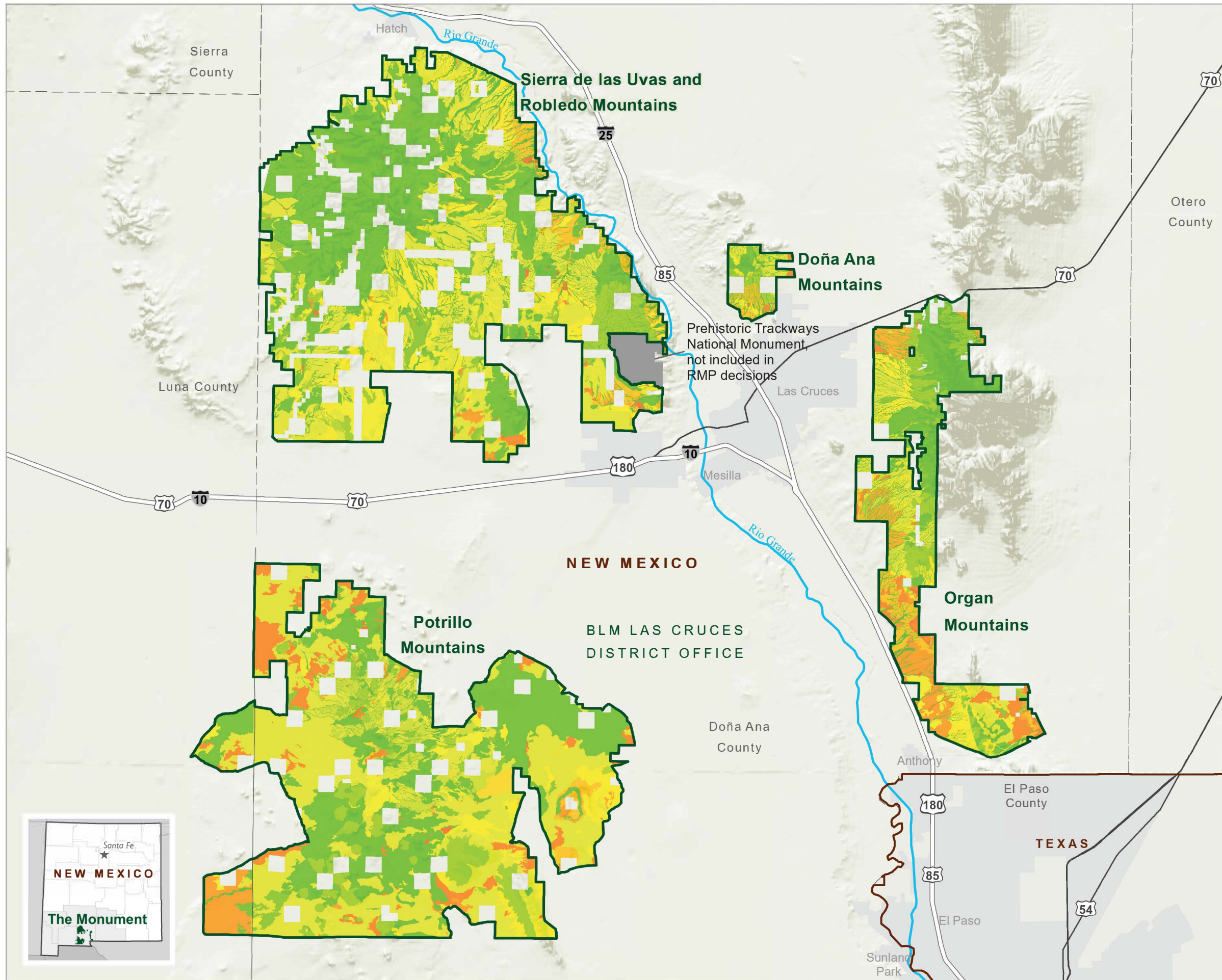
**Figure 3-2
Vegetation Types in the Monument**

- G490 Chihuahuan Desert Foothill-Piedmont & Lower Montane Grassland Group
- G288 Chihuahuan Creosotebush - Mixed Desert Scrub Group
- G819 North American Warm Desert Ruderal Scrub Group
- G489 Chihuahuan Semi-Desert Lowland Grassland Group
- G541 Warm Semi-Desert Shrub & Herb Dry Wash & Colluvial Slope Group
- G286 Chihuahuan Desert Succulent Scrub Group
- G491 Chihuahuan Sandy Plains Semi-Desert Grassland Group
- G569 North American Warm Semi-Desert Cliff, Scree & Pavement Sparse Vegetation Group
- M010 Madrean Lowland Evergreen Woodland Macrogroup
- G287 Chihuahuan Desert Sand Scrub Group
- Other
- Organ Mountains-Desert Peaks National Monument







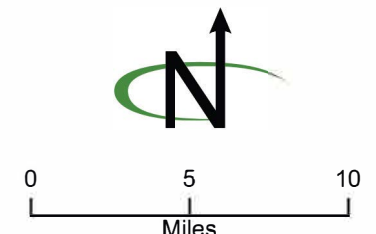
Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 February 17, 2023, OrganMtnsRMP_AE_resources_Veg.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum



**Figure 3-3
Vegetation Departure from Reference
Condition in the Monument**

-  Highly departed from reference condition
-  Not departed from reference condition
-  Not departed from reference condition
-  Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 February 17, 2023, OrganMtnsRMP_AE_resources_VegDepart.mxd
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Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

Table 3-13
USNVC Vegetation Types in the Monument

Macrogroup	Percentage of the Monument ¹	Group	Percentage of the Monument ¹
M010 Madrean Lowland Evergreen Woodland	0.6	N/A	N/A
M011 Madrean Montane Forest and Woodland	0.1	N/A	N/A
M036 Interior Warm and Cool Desert Riparian Forest	0.01	G797 Western Interior Riparian Forest and Woodland	0.01
M086 Chihuahuan Desert Scrub	30.0	G286 Chihuahuan Desert Succulent Scrub	4.0
		G287 Chihuahuan Desert Sand Scrub	0.3
		G288 Chihuahuan Creosotebush - Mixed Desert Scrub	25.0
		G299 Chihuahuan Desert Lowland Basin Scrub	0.4
M087 Chihuahuan Semi-Desert Grassland	39.0	G489 Chihuahuan Semi-Desert Lowland Grassland	8.0
		G490 Chihuahuan Desert Foothill - Piedmont and Lower Montane Grassland	29.0
		G491 Chihuahuan Sandy Plains Semi-Desert Grassland	2.0
M092 North American Warm-Desert Xeric-Riparian Scrub	6.0	G541 Warm Semi-Desert Shrub and Herb Dry Wash and Colluvial Stone	6.0
M117 North American Warm Semi-Desert Cliff, Scree and Rock Vegetation	0.6	G569 North American Warm Semi-Desert Cliff, Scree, and Pavement Sparse Vegetation	0.6
M512 North American Warm Desert Ruderal Scrub and Grassland	23.0	G677 North American Warm Desert Ruderal Grassland	0.5
		G819 North American Warm Desert Ruderal Scrub	23.0

Source: BLM GIS 2022

¹ Due to rounding errors, percentages may not total 100.

The presence of invasive plants is one indicator related to determining the current condition of vegetation and includes three categories of plants: noxious weeds, invasive species, and opportunistic native species (see page 30 of the AMS for a definition of these categories). Noxious weeds, invasive species, and opportunistic native species occur in the Monument.

The most frequent invasive species are Lehmann lovegrass (*Eragrostis lehmanniana*), prickly Russian thistle (*Salsola tragus*), redstem stork's bill (*Erodium cicutarium*), common Mediterranean grass (*Schismus barbatus*), cheatgrass (*Bromus tectorum*), and red brome (*Bromus rubens*).

Apart from cheatgrass, noxious weeds are infrequent in the Monument. Harmal peganum (*Peganum harmala*), also known as African rue, is limited to a few particularly disturbed sites, especially ROWs. Five-stamen tamarisk (*Tamarix chinensis*) and Siberian elm (*Ulmus pumila*) are limited to small sites within the M036 and M092 vegetation macrogroups. Maltese star-thistle (*Centaurea melitensis*) has not been

definitively recorded in the Monument, but it is known to occur in the nearby communities of Las Cruces, Chaparral, and the White Sands Missile Range cantonment area; it likely is present in the Monument.

The most frequent opportunistic native species are creosote bush, honey mesquite, and broom snakeweed (*Gutierrezia sarothrae*). Given that opportunistic native species are a normal component of most ecological sites in the Monument, even in the reference state, their mere presence is not a problem. They are problematic to the extent that management actions and resource uses have caused them to become excessively abundant in particular areas.

The BLM uses Assessment, Inventory, and Monitoring (AIM) Strategy and Landscape Monitoring Framework data (herein referred to as “AIM data”) nationally as a tool to assess natural resource conditions and trends and to determine whether rangeland health standards are being met. These data are collected from monitoring plots across the western United States. According to AIM data collected from plots in the Monument (Traynor 2022), the highest average invasive species cover is found in the G819 vegetation group at low elevations (**Table 3-14**). To date, Lehmann lovegrass has been detected on 57 AIM plots in the Monument and ranges from 0.3 to 66.3 percent cover in the Monument. Lehmann lovegrass becomes the dominant perennial grass species when the native grass community has been adversely impacted from grazing, drought, and the combination of these factors. It is important to note that AIM data are not collected on slopes greater than 50 percent so these areas may not be accurately represented. Therefore, cheatgrass and red brome may not be adequately sampled in the Monument.

**Table 3-14
Percent Invasive Cover by Vegetation Type and Elevation in the Monument**

USNVC Group	High Elevation (greater than 5,250 feet)			Low Elevation (less than 5,250 feet)		
	Mean (% cover)	Standard Deviation	Plot Count	Mean (% cover)	Standard Deviation	Plot Count
G286 Chihuahuan Desert Succulent Scrub Group	6.90	12.85	10	5.82	17.34	15
G490 Chihuahuan Desert Foothill-Piedmont & Lower Montane Grassland Group	0.78	1.53	20	4.55	20.59	46
G541 Warm Semi-Desert Shrub & Herb Dry Wash & Colluvial Slope Group	0.67	N/A	1	1.20	1.87	10
G569 North American Warm Semi-Desert Cliff, Scree & Pavement Sparse Vegetation Group	0.00	N/A	1	N/A	N/A	N/A
M010 Madrean Lowland Evergreen Woodland Macrogroup	1.11	1.92	3	N/A	N/A	N/A
M011 Madrean Montane Forest & Woodland Macrogroup	3.33	5.77	3	N/A	N/A	N/A
G288 Chihuahuan Creosotebush - Mixed Desert Scrub Group	N/A	N/A	N/A	8.34	26.29	68
G299 Chihuahuan Desert Lowland Basin Scrub Group	N/A	N/A	N/A	0.00	0.00	2
G489 Chihuahuan Semi-Desert Lowland Grassland Group	N/A	N/A	N/A	6.96	22.64	38

USNVC Group	High Elevation (greater than 5,250 feet)			Low Elevation (less than 5,250 feet)		
	Mean (% cover)	Standard Deviation	Plot Count	Mean (% cover)	Standard Deviation	Plot Count
G491 Chihuahuan Sandy Plains Semi-Desert Grassland Group	N/A	N/A	N/A	1.70	2.57	11
G677 North American Warm Desert Ruderal Grassland Group	N/A	N/A	N/A	2.33	N/A	1
G819 North American Warm Desert Ruderal Scrub Group	N/A	N/A	N/A	20.00	39.93	41

Source: Traynor 2022

Note: N/A = no AIM data are available for that cover type-elevation combination

At low elevations (less than approximately 5,250 feet), vegetation prior to Euro-American contact included extensive grasslands and shrub savannas, and small areas of shrubland. The climate at these elevations is marginal for grassland and subject to drought. Black grama (*Bouteloua eriopoda*), formerly a dominant or codominant grass in most of these areas, does not tolerate grazing or other forms of disturbance well. As a result, these grasslands and shrub savannas were vulnerable to transitions to shrubland induced by grazing, and especially by the combination of grazing and drought.

From American settlement to the present, grazing has been the primary resource use and impact on these landscapes. Most of the grasslands and shrub savannas at low elevations have been lost, primarily from the 1890s to the 1950s when poor grazing management coincided with periods of severe drought. Efforts to restore grasslands without substantial changes to grazing management have yielded benefits to other resources or resource uses, but they have rarely resulted in improvements in the condition of the vegetation itself. Changes in climate and the spread of invasive species are additional factors adversely impacting the condition of vegetation at these elevations and are perhaps limiting the vegetation’s ability to improve.

At intermediate or high elevations (greater than approximately 5,250 feet), there has been less impact from grazing or other resource uses. These elevations receive greater rainfall and are more resilient. Also, steep or rocky terrain makes them more difficult for cattle to access. Other resource uses, including recreation, minerals development, and ROWs, have been either localized to small areas or precluded by a lack of valuable minerals and the unsuitability of steep terrain for utility corridors or other development. Decreased fire frequency has probably had an effect on vegetation, but that effect has not been well documented. In these areas, vegetation is generally in good condition. Maintenance of current conditions could be accomplished by limiting potential future increases in disturbance or other impacts from resource use. It could also be achieved by addressing forces, like changes in climate, invasive species, and decreased fire frequency, which can cause ecological degradation in the absence of direct on-the-ground impacts on vegetation caused by management actions or resource uses.

According to AIM data collected from plots in the Monument (Traynor 2022), the highest average bare ground cover is found in the G299 and G819 vegetation groups at low elevations (**Table 3-15**). AIM plots in these vegetation groups also have the highest average area with large canopy gaps, where large is defined as greater than 6.6 feet (**Table 3-16**). Bare ground and large canopy gaps are likely influenced by past and current grazing combined with drought.

Table 3-15
Percent Bare Ground by Vegetation Type and Elevation in the Monument

USNVC Group	High Elevation (greater than 5,250 feet)			Low Elevation (less than 5,250 feet)		
	Mean (%)	Standard Deviation	Plot Count	Mean (%)	Standard Deviation	Plot Count
G286 Chihuahuan Desert Succulent Scrub Group	1.90	1.59	10	3.58	3.77	15
G490 Chihuahuan Desert Foothill-Piedmont & Lower Montane Grassland Group	3.13	5.22	20	13.74	13.76	46
G541 Warm Semi-Desert Shrub & Herb Dry Wash & Colluvial Slope Group	20.13	N/A	1	14.83	13.26	10
G569 North American Warm Semi-Desert Cliff, Scree & Pavement Sparse Vegetation Group	0.00	N/A	1	N/A	N/A	N/A
M010 Madrean Lowland Evergreen Woodland Macrogroup	1.11	1.02	3	N/A	N/A	N/A
M011 Madrean Montane Forest & Woodland Macrogroup	4.89	2.14	3	N/A	N/A	N/A
G288 Chihuahuan Creosotebush - Mixed Desert Scrub Group	N/A	N/A	N/A	14.58	14.79	68
G299 Chihuahuan Desert Lowland Basin Scrub Group	N/A	N/A	N/A	53.00	15.08	2
G489 Chihuahuan Semi-Desert Lowland Grassland Group	N/A	N/A	N/A	25.07	19.05	38
G491 Chihuahuan Sandy Plains Semi-Desert Grassland Group	N/A	N/A	N/A	29.82	13.97	11
G677 North American Warm Desert Ruderal Grassland Group	N/A	N/A	N/A	5.00	N/A	1
G819 North American Warm Desert Ruderal Scrub Group	N/A	N/A	N/A	43.43	18.38	41

Source: Traynor 2022

Note: N/A = no AIM data are available for that cover type-elevation combination

Table 3-16
Large Canopy Gaps (greater than 6.6 feet) Cover by Vegetation Type and Elevation in the Monument

USNVC Group	High Elevation (greater than 5,250 feet)			Low Elevation (less than 5,250 feet)		
	Mean (%)	Standard Deviation	Plot Count	Mean (%)	Standard Deviation	Plot Count
G286 Chihuahuan Desert Succulent Scrub Group	6.37	7.54	10	15.23	20.93	15
G490 Chihuahuan Desert Foothill-Piedmont & Lower Montane Grassland Group	2.74	3.86	20	24.98	22.23	46
G541 Warm Semi-Desert Shrub & Herb Dry Wash & Colluvial Slope Group	22.87	N/A	1	19.34	18.31	10
G569 North American Warm Semi-Desert Cliff, Scree & Pavement Sparse Vegetation Group	18.15	N/A	1	N/A	N/A	N/A
M010 Madrean Lowland Evergreen Woodland Macrogroup	0.00	0.00	3	N/A	N/A	N/A
M011 Madrean Montane Forest & Woodland Macrogroup	4.25	1.90	3	N/A	N/A	N/A
G288 Chihuahuan Creosotebush - Mixed Desert Scrub Group	N/A	N/A	N/A	32.63	24.48	68
G299 Chihuahuan Desert Lowland Basin Scrub Group	N/A	N/A	N/A	36.88	6.05	2
G489 Chihuahuan Semi-Desert Lowland Grassland Group	N/A	N/A	N/A	23.33	24.57	38
G491 Chihuahuan Sandy Plains Semi-Desert Grassland Group	N/A	N/A	N/A	31.36	31.29	11
G677 North American Warm Desert Ruderal Grassland Group	N/A	N/A	N/A	0.00	N/A	1
G819 North American Warm Desert Ruderal Scrub Group	N/A	N/A	N/A	36.94	29.89	41

Source: Traynor 2022

Note: N/A = no AIM data is available for that cover type-elevation combination

Current conditions appear to be stable; however, several forces in the future may cause increased departure from reference conditions or prevent improvements in the condition of vegetation. The primary forces are grazing, invasive species, and climate change. Wildland fire may also be an important force at intermediate and high elevations, and it is discussed in more detail in Section 2.1.5 of the AMS (BLM 2022a). Motorized recreational impacts may be very important at particular sites that receive high visitation.

Additional information is available in Sections 2.1.4 and 3.3, Vegetative Communities, of the AMS (BLM 2022a).

3.4.3 Environmental Consequences

Issue 1: How would the potential for ground disturbance or the potential increase in vectors for invasive weed spread be affected under the range of alternatives?

Summary of Analytical Methods

The following analysis reviews the impacts each proposed alternative would have on the introduction and spread of noxious and invasive plant species. The evaluation of noxious and invasive weed effects on various resources is based largely on the potential for weed spread. Weed spread is often influenced by the extent of disturbed soil and the proximity of established weed infestation to areas of disturbance. Assessing weed spread is based, in part, on evaluating the difference in frequency, intensity, or type of management activity or natural processes that result in significant soil disturbance.

In addition, the mechanism for the transport of weed seed is termed a “vector.” Vectors for weed spread include equipment, vehicles, animals, people, wind, and water. Vectors associated with, or resulting from, future management activities in the Monument may affect various resources by aiding in the spread of weeds. Comparisons are made between alternatives based on their potential to cause ground disturbance or increase vectors for weed spread.

Indicators

- Potential for ground disturbance or an increase in vectors for weed spread

Assumptions

- The BLM assumes that the establishment of new undocumented weed infestations has likely occurred and would continue to occur over the life of the plan; this is not reflected in the affected environment description for invasive plant infestations.
- Across all alternatives, noxious and invasive plant species would likely remain present in the Monument to varying extents.

Impacts Common to All Alternatives

Fuels treatments, including prescribed fire and mechanical treatments, that result in surface disturbance would increase the risk of noxious and invasive weed establishment. However, best management practices used under all action alternatives to prevent the introduction of noxious and invasive weeds during fuels treatments would reduce this risk considerably.

Recreation, including OHV use, hiking, mountain biking, and horseback riding, increase the vectors for weed spread.

Grazing can also increase susceptibility for the introduction and spread of noxious and invasive weeds by degrading the native grass community and creating ground disturbance from the livestock themselves and from maintenance of associated infrastructure. Livestock movement and associated activities, such as the transport of contaminated hay, can also introduce noxious and invasive weeds into new locations. Under all alternatives, 492,062 acres would continue to be available for grazing and therefore would continue to be at risk of the establishment and spread of noxious and invasive weeds.

Climate change has led to increased disturbances, such as increased high-intensity wildland fires, and increased drought, which favor the establishment of nonnative and invasive species, such as Lehmann

lovegrass and cheatgrass (Burruss et al. 2022; Moran et al. 2009). Invasive species' establishment can shift the dominance of vegetation (for example, from perennial shrubs to annual grasses) and alter the fire regime by changing fuels.

Alternative A (No Action Alternative)

The current RMP includes management direction for noxious weeds. However, it does not mention invasive plant species, and it does not include an objective to eradicate, control, or prevent establishment of invasive species. Under the No Action Alternative, noxious and invasive weeds would continue to be treated. However, if current trends continue, the BLM expects noxious and invasive weeds to continue to spread and establish across the Monument, resulting in a continued reduction in ecological resilience and an increased potential for uncharacteristic fire in higher-elevation areas. Therefore, the direction in the current RMP would remain insufficient to prevent the continued spread of noxious and invasive weeds.

Action Alternatives (Alternatives B through D)

Across all action alternatives, the objective to eradicate or control invasive species and prevent establishment of invasive species elsewhere would help to slow the establishment and spread of noxious and invasive species to a greater extent than Alternative A. Vegetation treatments would be in accordance with the 2007 and 2016 Vegetation Treatment Programmatic EISs (BLM 2007, 2016). This would allow for a broader suite of treatment options to address invasive plant species' establishment and spread compared with Alternative A. Weed-control and prevention measures would help reduce weed cover in the Monument and prevent weed introduction and spread over the long term. The BLM would follow the herbicide use protocols and standard operating procedures, as described in the 2007 and 2016 Programmatic EISs for Vegetation Treatments Using Herbicides (BLM 2007, 2016), to reduce impacts on nontarget vegetation from herbicide treatments.

Management direction under all action alternatives to conduct utilization monitoring and land health assessments, as well as indicators of rangeland health to ensure permitted animal unit months (AUMs) will not lead to degradation of wildlife habitat and to ensure AUMs are compatible with restoring wildlife habitat, would help to prevent invasive species' establishment and spread to a greater extent than Alternative A, which focuses on wildlife population goals rather than habitat. Additionally, management direction to ensure sensitive habitats for special status species are protected from nonnative ungulates' impacts would reduce the risk of noxious and invasive species' establishment and spread in these areas by reducing vectors of weed spread and disturbance pathways.

Other objectives and management direction that aim to stabilize soils, restore reference plant communities, and protect, restore, and maintain the ecological integrity of native biological communities would result in long-term reductions in noxious and invasive species' establishment and spread across the Monument. Objectives to promote research on invasive species eradication, control, and prevention and to work with cooperating agencies to do so would also result in long-term reductions in noxious and invasive species' establishment and spread across the Monument and adjacent lands.

Alternatives B and C include direction to address the structure, composition, and plant functional groups as detailed in ecological site descriptions. Alternative D also includes this direction but with an emphasis placed on grasslands. Both management directions would help to reduce noxious and invasive species in invaded communities more than Alternative A. However, they would vary in intensity of the communities affected; Alternative D would have a greater positive effect on grassland communities, which are in general

highly departed from their reference states and have a larger percentage of invasive grasses compared with the other vegetation communities in the Monument.

Due to increased acres in SRMAs and acres closed to motorized OHV travel, Alternatives B and C would have more restrictions on recreation and travel management when compared with Alternative A. This would result in decreased vectors for noxious and invasive species spread via motor vehicles and humans when compared with Alternative A. Alternative D would have the smallest number of restrictions on recreation and travel management. This would result in increased vectors for noxious and invasive species spread via motor vehicles and humans when compared with Alternative A.

Cumulative Impacts

The analysis area for cumulative impacts on the establishment and spread of noxious and invasive weeds is the planning area. Vectors (for example, livestock, vehicles, recreationists, water, wind, and wildlife) and disturbances (for example, roads, grazing, fuel treatments, water developments, and recreation developments) that contribute to weed spread would continue to be present in the Monument and are expected to increase. Project-specific mitigations, incorporated into all new projects on BLM-administered lands, help reduce the risk of new infestations and the spread of weeds associated with new disturbance.

Projects and improvements planned for the Monument and surrounding areas will likely cause an increase in recreational use. Therefore, they will likely cause an increased risk of potential unplanned, human-caused ignitions that could result in damage to vegetation, increased vectors, and increased surface disturbance, which provide an opportunity for noxious and invasive species to establish and spread. Several projects, including trail development and improvements, have weed-prevention measures during construction (for example, equipment cleaning, weed-free hay and mulch, and revegetation) as well as measures included for post-project noxious and invasive plant control. State and US Forest Service lands adjacent to BLM-administered lands have noxious weed-control efforts underway for state-listed noxious weeds.

All alternatives would contribute to the cumulative effects on the establishment and spread of noxious and invasive weeds. However, the contribution would likely be highest under Alternatives A and D (due to less restrictive travel and recreation management in the planning area) and smallest under Alternative B (due to having the most restrictive travel and recreation management in the planning area).

Issues 2 and 3

Issue 2: How would vegetation communities at low elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, grazing, and ROW allocations?

Issue 3: How would vegetation communities at intermediate or high elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, grazing, and ROW allocations?

Summary of Analytical Methods

The following analysis reviews the impacts each proposed alternative would have on vegetation communities in the Monument. Comparisons are made between alternatives and the baseline based on their relative effect on the vegetation communities. Differences among the alternatives may be expressed both qualitatively and quantitatively. For each alternative, the acres of plan components that change by

alternative (for example, ROW allocations) were overlaid with mapped vegetation types to present a quantitative analysis.

Indicators

- The indicator of impacts on vegetation is the acres of vegetation communities open to potential vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, grazing, and ROW allocations.

Assumptions

- Terrestrial ecosystems are complex and contain many known and unknown factors that interact with each other, often in unpredictable ways. There are gaps in available information about ecological functioning. Vegetation is dynamic and changing constantly; the BLM's ability to predict changes in the future is limited. The level of uncertainty depends on how predictable such factors as disturbances, climate change, or human activities may be.
- Assuming best management practices are followed, the BLM expects that the long-term ecological condition and function would improve as the result of vegetation management activities, although there may be some temporary impairment (for example, soil disturbance and runoff) in the short term.

Impacts Common to All Alternatives for Issues 2 and 3

Areas identified as avoidance or exclusion for ROWs would reduce the risk of crushing or removing vegetation and the introduction and spread of noxious and invasive weeds and fugitive dust. ROW exclusion areas would offer greater protections for vegetation than avoidance areas because they would completely prohibit surface-disturbing activities. Limiting vehicle use to existing or designated routes would also reduce the amount of vegetation crushed or removed.

Impacts from recreation 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 and cross-country hiking. Where recreation is managed using an SRMA on BLM-administered lands, impacts from recreation could be concentrated in one area; however, this could prevent impacts from dispersed recreation elsewhere in the Monument. Further, rules and guidelines in SRMAs would limit or control activities through specialized management tools, such as designated campsites, permits, area closures, and limitations on the number of users, duration of use, and types of events.

Habitat improvements for special status species, fish, and wildlife through the development of habitat management plans, management direction in ACECs, and other habitat protections would maintain or improve vegetation. These could move vegetation communities in these areas toward desired conditions.

All designated wilderness areas would continue to be closed for motorized and mechanized travel except for administrative and emergency purposes. These closures would decrease the potential impacts on vegetation from trampling, crushing, and fugitive dust in these areas. Acres of designated wilderness areas do not change across alternatives and therefore are not discussed further.

Grazing and trampling can reduce terrestrial vegetation productivity by causing soil compaction or erosion, damaging native plants, and damaging tree seedlings (Guenther et al. 2004; Duniway et al. 2018). Grazing can also reduce ecological resilience by increasing the spread of invasive plants, altering fuel loads, and

altering species composition. The degree of alteration would depend on the extent of the removal, length of grazing period, and climatic conditions. As discussed in **Section 3.4.2**, grazing typically has a greater impact on vegetation at low elevations than mid to high elevations. Acres available and unavailable to grazing do not change across alternatives and therefore are not discussed further.

Areas that are highly departed with limited restoration potential are unlikely to move toward the desired state and conditions without additional inputs. However, disturbances in these areas could result in further degradation into adjacent communities. Increased disturbance in all vegetation types with limited restoration potential could result in increased erosion or invasion from nonnative, invasive species.

Restoration activities, in combination with reduced surface disturbance, could initiate succession that could lead to a transition toward a more desired plant community that is closer to the potential natural community of the ecological site. For example, shrub-scrub communities could transition to grassland-herbaceous vegetation through the increased cover of herbaceous species resulting from restoration treatments.

Under all alternatives, the BLM would implement vegetation treatments that could transition vegetation communities toward a site's ecological capability or the potential natural community. This would result in long-term increases in the vegetation cover, production, species enrichment, and soil water-holding capability. Prescribed fire treatments can also help move vegetation toward desired conditions and help create optimal conditions for establishment and seedling growth, particularly in ponderosa pine forests. They also may reduce density, return sites to an early successional stage, promote large tree growth, and favor fire-tolerant species (Morino 1996). Prescribed fire treatments in New Mexican shortgrass prairie grasslands comprised of mixed buffalograss and blue grama have led to increases in grass cover, forb cover, and species richness (Brockway et al. 2001). However, other studies conducted near the Monument that looked at prescribed fire in grasslands showed that prescribed fire resulted in reduced cover and biomass of black grama (Havstad and James 2010; Drewa and Havstad 2001). These results were likely due to a combination of prescribed fire, grazing, and drought.

Impacts common to all alternatives for vegetation at intermediate to high elevations would be largely the same as the impacts common to all alternatives for vegetation at low elevations. However, changes in fire frequency are more likely to be a factor at intermediate to high elevations.

Impacts from changing climate patterns, such as increases in temperature and changes in precipitation patterns, will continue to impact vegetation communities in the Monument. As described in **Section 3.4.2**, climate change may limit the ability of vegetation at low elevations to improve. Increases in temperature, decreases in precipitation, or increases in carbon dioxide could either directly cause grassland to shrubland transitions or reduce the level of grazing pressure that causes such transitions. Current grazing practices could become less sustainable in the future, and grassland restoration may become less feasible if the climate is less capable of supporting grasslands in the future. Climate change may also affect vegetation at high elevations. As temperatures increase and temperature zones move up in elevation, higher-elevation areas can be colonized by lower-elevation vegetation, and the suitability for high-elevation endemic and sensitive species will be limited.

Issue 2: How would vegetation communities at low elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, grazing, and ROW allocations?

Alternative A (No Action Alternative)

Management direction under Alternative A would continue to implement land treatments and establish desired plant community objectives in the development of grazing activity plans. Acreage targets would not be established for restoration via changes in grazing management. Vegetation monitoring would only be implemented in grazing allotments as needed. Alternative A would not include management direction to address the structure, composition, and plant functional groups as detailed in ecological site descriptions. Therefore, areas that are departed from the historical reference state would likely continue to grow even more departed. At low elevations, this would be seen in areas that are on gentler, less rocky terrain that cattle easily traverse.

At elevations less than 5,250 feet, approximately 257,263 acres would continue to be in ROW exclusion areas under Alternative A, and 214,467 acres would continue to be closed to motorized vehicle use (Table 3-17 and Table 3-18). These areas would continue to provide enhanced protection to vegetation communities by reducing impacts from surface-disturbing activities, as described under *Impacts Common to All Alternatives*.

**Table 3-17
Acres of Vegetation in ROW Avoidance and Exclusion Areas at Elevations Less than 5,250 Feet for Alternative A**

Alternative	ROW Avoidance Area	ROW Exclusion Area	Total
Alternative A	192,982	257,263	450,245

Source: BLM GIS 2022

**Table 3-18
Acres of Vegetation Closed to Motorized OHV Travel and Limited to Designated Roads at Elevations Less than 5,250 Feet for Alternative A**

Alternative	Closed to Motorized OHV Travel	Limited to Designated Roads	Total
Alternative A	214,467	235,778	450,245

Source: BLM GIS 2022

The BLM would continue to manage approximately 40,875 acres of vegetation at low elevations as SRMAs (Table 3-19), 44,715 acres as ACECs (Table 3-20), and 3,736 acres as RNAs (Table 3-20). These designations would benefit vegetation communities by limiting or restricting impacts from recreation and surface-disturbing activities, as described under *Impacts Common to All Alternatives*.

**Table 3-19
Acres of Vegetation in SRMAs at Elevation Less than 5,250 Feet for Alternative A**

	SRMA
Alternative A	40,875

Source: BLM GIS 2022

**Table 3-20
Acres of Vegetation in Specially Designated Areas at Elevations Less than 5,250 Feet for
Alternative A**

	ACEC	RNA	Total
Alternative A	44,715	3,736	48,451

Source: BLM GIS 2022

Action Alternatives (Alternatives B through D)

In general, all action alternatives would result in less potential for surface disturbance to affect vegetation than Alternative A. Compared with Alternative A, they also would reduce impacts on vegetation by including more management actions that address the potential impacts on vegetation and the proper care and management of relevant Monument objects and values. Management direction to address the structure, composition, and plant functional groups, as detailed in ecological site descriptions, would help move vegetation that is departed from the reference state toward desired conditions at a faster rate than Alternative A.

Alternative D includes this direction but places an emphasis on grasslands, which make up approximately 62 percent of the Monument. The grasslands in the Monument are most prevalent at low elevations and have been impacted the most by grazing and drought. Under all action alternatives, direction to stabilize soils by maintaining appropriate vegetation cover and minimizing surface disturbance would indirectly benefit vegetation communities at low elevations to a higher degree than under Alternative A, which does not include similar direction.

Vegetation management under Alternative B would aim to meet the ecological site potential, natural community, or reference ecological state. Management under Alternatives C and D would use vegetation treatments to increase native vegetation to the site’s capability. Both approaches would improve vegetation conditions faster than Alternative A, but they would differ in the end goals for community composition. Alternative B would strive to restore pre-European settlement plant communities. Alternatives C and D would strive for plant communities that can be achieved under the current social and economic constraints; they would include a more disturbance-adapted community, which would be a more feasible goal. This approach would be more likely to move vegetation toward desired conditions compared with Alternative B.

Under Alternative B, the greatest number of acres would be excluded from ROW projects (258,840 acres; **Table 3-21**) and closed to motorized travel (240,373 acres; **Table 3-22**) at low elevations. This would reduce impacts on vegetation to a greater degree than under Alternative A. Alternative D would include the least number of acres in ROW exclusion areas (218,099 acres) and closed to motorized travel (212,638 acres); consequently, Alternative D would have the greatest number of acres limited to designated roads (237,607 acres). This would afford less protection to vegetation compared with Alternative A.

Table 3-21
Acres of Vegetation in ROW Avoidance and Exclusion Areas at Elevations Less than 5,250 Feet for All Action Alternatives

Alternative	ROW Avoidance Area	ROW Exclusion Area	Total
Alternative B	191,405	258,840	450,245
Alternative C	193,022	257,223	450,245
Alternative D	232,146	218,099	450,245

Source: BLM GIS 2022

Table 3-22
Acres of Vegetation Closed to Motorized OHV Travel and Limited to Designated Roads at Elevations Less than 5,250 Feet for All Action Alternatives

Alternative	Closed to Motorized OHV Travel	Limited to Designated Roads	Total
Alternative B	240,373	209,872	450,245
Alternative C	226,898	223,347	450,245
Alternative D	212,638	237,607	450,245

Source: BLM GIS 2022

Compared with Alternative A, Alternatives B and C would include more acres at low elevations designated as SRMAs and specially designated areas (**Table 3-23** and **Table 3-24**). As described under *Impacts Common to All Alternatives*, this would offer more protection to vegetation under these action alternatives. Under Alternative D, there would be no acres designated as ACECs, and only 6,488 acres would be included in SRMAs. Therefore, Alternative D would offer less protection than the other alternatives.

Table 3-23
Acres of Vegetation in SRMAs at Elevation Less than 5,250 Feet for All Action Alternatives

	SRMAs
Alternative B	47,212
Alternative C	45,308
Alternative D	6,488

Source: BLM GIS 2022

Table 3-24
Acres of Vegetation in Specially Designated Areas at Elevations Less than 5,250 Feet for All Action Alternatives

	ACECs
Alternative B	52,844
Alternative C	36,860
Alternative D	0

Source: BLM GIS 2022

Alternative B would offer the most protection for vegetation resources due to the acres that would be managed as SRMAs and ACECs and closed to surface disturbance from motorized activities and ROW development. Alternative D would have the fewest restrictions on recreation and travel management, and

it would provide the most opportunity for recreational shooting. These would result in less protection for vegetation and an increased potential for damage to vegetation by motor vehicles and trampling.

Cumulative Impacts

The analysis area for cumulative impacts on vegetation at low elevations is the planning area. Ongoing activities in the Monument that can affect vegetation include road and trail construction, building and facility construction, and trail improvements.

Planned projects across low and high elevations in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on vegetation. These projects consist of rehabilitating existing roads, improving overall accessibility, and maintaining trails and existing infrastructure. These projects could increase fugitive dust and erosion after construction, degrade surrounding vegetation, and disturb soil, which can increase invasive weed establishment and spread. However, because best management practices would be used before, during, and after construction, impacts on vegetation would be localized and short term. Additionally, because these projects largely consist of improvements to existing infrastructure, impacts would be confined to the road corridor or existing footprint.

These projects and improvements will likely cause an increase in recreational use. Therefore, they will likely cause an increased risk of potential unplanned, human-caused ignitions and an increased risk of trampling that could result in damage to vegetation, increased vectors, and increased surface disturbance, which provide an opportunity for invasive species to establish and spread.

All alternatives would contribute to the cumulative effects on vegetation at low elevations but would likely be highest under Alternatives A and D (due to less restrictive travel and recreation management in the planning area) and smallest under Alternative B (due to having the most restrictive travel and recreation management in the planning area).

Issue 3: How would vegetation communities at intermediate or high elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, grazing, and ROW allocations?

Alternative A (No Action Alternative)

Management direction under Alternative A would continue to implement land treatments and establish desired plant community objectives in the development of grazing activity plans. Acreage targets would not be established for restoration via changes in grazing management. Vegetation monitoring would only be implemented in grazing allotments as needed. Alternative A would not include management direction to address the structure, composition, and plant functional groups as detailed in ecological site descriptions. Therefore, areas that are departed from the historical reference state would likely continue to grow even more departed. However, this may not have as great of an effect at intermediate to high elevations in the Monument, which are generally less departed from the reference state and have experienced less impacts from grazing.

At elevations greater than or equal to 5,250 feet, approximately 28,709 acres would continue to be in ROW exclusion areas under Alternative A, and 28,054 acres would continue to be closed to motorized vehicle use (**Table 3-25** and **Table 3-26**). These areas would continue to provide enhanced protection to vegetation communities by reducing impacts from surface-disturbing activities, as described under *Impacts Common to All Alternatives*.

**Table 3-25
Acres of Vegetation in ROW Avoidance and Exclusion Areas at Elevations Greater than or Equal to 5,250 Feet for Alternative A**

Alternative	ROW Avoidance Area	ROW Exclusion Area	Total
Alternative A	15,754	28,709	44,463

Source: BLM GIS 2022

**Table 3-26
Acres of Vegetation Closed to Motorized OHV Travel and Limited to Designated Roads at Elevations Greater than or Equal to 5,250 Feet for Alternative A**

Alternative	Closed to Motorized OHV Travel	Limited to Designated Roads	Total
Alternative A	28,054	16,409	44,463

Source: BLM GIS 2022

Alternative A would have the most acres contained within ACECs (19,291 acres; **Table 3-27**) and SRMAs (18,557 acres; **Table 3-28**) at intermediate and high elevations. These areas would continue to offer protection to and benefit vegetation communities at intermediate and high elevations by limiting or restricting impacts from recreation and surface-disturbing activities.

**Table 3-27
Acres of Vegetation in SRMAs at Elevations Greater than or Equal to 5,250 Feet for Alternative A**

Alternative	SRMA
Alternative A	18,557

Source: BLM GIS 2022

**Table 3-28
Acres of Vegetation in Specially Designated Areas at Elevations Greater than or Equal to 5,250 Feet for Alternative A**

Alternative	ACEC
Alternative A	19,291

Source: BLM GIS 2022

Action Alternatives (Alternatives B through D)

In general, compared with Alternative A, all action alternatives would reduce the impacts on vegetation by including more management actions that address the potential impacts on vegetation and the proper care and management of relevant Monument objects and values. Management direction to address the structure, composition, and plant functional groups, as detailed in ecological site descriptions, would help move vegetation that is departed from the reference state toward desired conditions at a faster rate than

Alternative A. Direction to stabilize soils by maintaining the appropriate vegetation cover and minimizing surface disturbance would benefit vegetation communities at intermediate to high elevations to a higher degree than Alternative A, which does not include similar direction.

Management objectives under all action alternatives would aim to use prescribed fire and wildfire to protect, restore, and maintain the ecological integrity of native communities. This would help improve landscape health by returning fire to its natural role in the ecosystem. It also would move fire-departed vegetation communities at intermediate to high elevations toward desired conditions at a faster rate than under Alternative A, which does not include a similar objective.

At intermediate to high elevations, Alternatives B and C would have approximately the same number of acres that would be excluded from ROW projects (28,713 and 28,659 acres, respectively; **Table 3-29**) as Alternative A and only approximately 700 and 400 more acres closed to motorized travel (28,800 and 28,450 acres, respectively; **Table 3-30**) compared with Alternative A. Therefore, Alternatives B and C would reduce impacts on vegetation from surface disturbance to a slightly higher degree than Alternative A. Alternative D would include the least number of acres in ROW exclusion areas (26,683 acres; **Table 3-29**) and closed to motorized travel (26,683 acres; **Table 3-30**); consequently, Alternative D would include the greatest number of acres limited to designated roads (17,780 acres; **Table 3-30**). This would afford less protection to vegetation, as described under *Impacts Common to All Alternatives*, compared with Alternative A.

Table 3-29
Acres of Vegetation in ROW Avoidance and Exclusion Areas at Elevations Greater than or Equal to 5,250 Feet for All Action Alternatives

Alternative	ROW Avoidance Area	ROW Exclusion Area	Total
Alternative B	15,750	28,713	44,463
Alternative C	15,804	28,659	44,463
Alternative D	17,780	26,683	44,463

Source: BLM GIS 2022

Table 3-30
Acres of Vegetation Closed to Motorized OHV Travel and Limited to Designated Roads at Elevations Greater than or Equal to 5,250 Feet for All Action Alternatives

Alternative	Closed to Motorized OHV Travel	Limited to Designated Roads	Total
Alternative B	28,800	15,663	44,463
Alternative C	28,450	16,013	44,463
Alternative D	26,683	17,780	44,463

Source: BLM GIS 2022

All action alternatives would include fewer acres designated as SRMAs and ACECs at intermediate to high elevations than Alternative A (**Table 3-31** and **Table 3-32**). These areas would still offer enhanced protection to vegetation, as described under *Impacts Common to All Alternatives*, but in fewer areas than under Alternative A. Under Alternative D, there would be no acres designated as ACECs, and only 796 acres would be included in SRMAs (**Table 3-31**). Therefore, Alternative D would offer less protection to vegetation compared with Alternative A.

**Table 3-31
Acres of Vegetation in SRMAs at Elevation Greater than or Equal to 5,250 Feet for All Action Alternatives**

	SRMAs
Alternative B	18,532
Alternative C	221
Alternative D	796

Source: BLM GIS 2022

**Table 3-32
Acres of Vegetation in Specially Designated Areas at Elevations Greater than or Equal to 5,250 Feet for All Action Alternatives**

	ACEC Acres
Alternative B	18,068
Alternative C	1,039
Alternative D	0

Source: BLM GIS 2022

At intermediate to high elevations, Alternatives B and C are comparable to Alternative A in terms of the potential for surface-disturbing impacts. However, management direction under all action alternatives would help move vegetation conditions toward desired conditions at a faster rate compared with Alternative A. Alternative D would have the greatest number of acres open to motorized travel and the fewest restrictions on recreation and travel management, which would result in the greatest potential for direct negative impacts on vegetation.

Cumulative Impacts

The analysis area for cumulative impacts on vegetation at intermediate and high elevations is the planning area. Ongoing activities in the Monument that can affect vegetation include road and trail construction, building and facility construction, and trail improvements.

Planned projects across high and low elevations in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on vegetation. These projects consist of rehabilitating existing roads, improving overall accessibility, maintaining trails, and maintaining existing infrastructure. These projects could increase fugitive dust and erosion after construction, degrade surrounding vegetation, and disturb soil, which can increase invasive weed establishment and spread. However, because best management practices would be used before, during, and after construction, impacts on vegetation would be localized and short term. Additionally, because these projects largely consist of improvements to existing infrastructure, impacts would be confined to the road corridor or existing footprint.

These projects and improvements will likely cause an increase in recreational use. Therefore, they will likely cause an increased risk of potential unplanned, human-caused ignitions that could result in damage to vegetation, increased vectors, and increased surface disturbance, which provide an opportunity for invasive species to establish and spread.

All alternatives would contribute to the cumulative effects on vegetation at intermediate and high elevations but would likely be highest under Alternatives A and D (due to less restrictive travel and

recreation management in the planning area) and smallest under Alternative B (due to having the most restrictive travel and recreation management in the planning area).

3.5 WILDLAND FIRE ECOLOGY AND MANAGEMENT

3.5.1 Key Points

- The Monument would be managed to reduce the potential for severe wildfires.
- Management would be expanded from target areas to the entire Monument and surrounding wildland-urban interface (WUI) area to reduce damage to infrastructure from fire.

3.5.2 Affected Environment

Fire regime is the combination of fire’s frequency, predictability, intensity, seasonality, and extent in any ecosystem. How far an ecosystem’s fire regime has diverted from historical norms can greatly impact the health of the ecosystem and indicate how well the ecosystem is adapted to fire.

The fire regime’s alteration over time and space is vitally important to understanding fire’s role in ecosystems—and more importantly, how an ecosystem’s function and resilience may be changing over time. Historical fire regimes may be thought of as a backdrop against which the current fire regime condition class (FRCC) is described. The FRCC is a classification system used to infer risk to the ecosystem’s sustainability and the risk of uncharacteristic wildland fire behavior and effects (Schmidt et al. 2002). Restoration of historical fire regimes may—or may not—be a goal related to restoration and/or maintenance of ecosystem function in a particular area due to social and political constraints. However, by delineating FRCCs within the context of the historical fire regime, land managers may be better able to predict fire’s extent, severity, intensity, and effects.

Generally, in all the Monument units there are few acres in FRCC Class 1 (see below for a description of each class). Most acres in the units are in FRCC Class 3 (see **Table 3-33**).

**Table 3-33
Fire Regime Condition Class Acreages by Monument Unit**

Unit	Class 1	Class 2	Class 3	Total Unit Acres
Organ Mountains	10,188	35,258	25,585	71,031
Doña Ana Mountains	410	3,349	3,507	7,266
Sierra de las Uvas and Robledo Mountains	13,166	80,413	107,819	201,398
Potrillo Mountains	1,487	41,444	172,949	215,880
Total FRCC Acres	25,251	160,464	309,860	495,575

Source: BLM GIS 2022

There are three FRCC classes:

FRCC Class 1

In FRCC Class 1, fire regimes are within or near a historical range. The risk of losing ecosystem components is low. Fire frequencies have departed from historical frequencies by no more than one return interval. Vegetation attributes (species composition and structure) are intact and functioning within a historical range.

FRCC Class 2

In FRCC Class 2, fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components has increased to moderate. Fire frequencies have departed (either increased or decreased) from historical frequencies by more than one return interval. This results in moderate changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns. Vegetation attributes have been moderately altered from their historical range.

FRCC Class 3

In FRCC Class 3, fire regimes have been significantly altered from their historical range. The risk of losing ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns. Vegetation attributes have been significantly altered from their historical range. As seen above in **Table 3-33**, 309,860 acres of the 495,575 acres (approximately 63 percent) identified across the units are classified as FRCC Class 3.

Historical fire frequency over the planning area has depended on vegetation types and elevation. Fires at lower elevations in grass and mixed shrub fuel types have typically occurred every 3–5 years and have been less than 500 acres. Large fires and large fire growth have been less frequent, occurring every 10–30 years and at higher elevations with more woody vegetation. Grassland burns typically take place before the growing season begins in late winter. To meet resource objectives in piñon-juniper habitat, prescribed fire treatments typically take place during late spring and summer; this is because they require the warmest and driest environmental conditions to mimic and reproduce historical pre-monsoonal lightning and natural ignition conditions.

Fuels treatments use various tools (prescribed fire, mechanical, and chemical) to reduce hazardous fuel loads, or to achieve natural resource objectives. Actual prescribed fire and mechanical accomplishments vary from year to year due to the budget allocation, weather patterns, fuel loadings, smoke considerations, and political concerns. The Dripping Springs prescribed fire treatments started in the late 1990s and have been evaluated annually for fuels loading and fuels continuity of the target treatment area. The Dripping Springs prescribed fires typically take place during late winter or early spring, with an approximate treatment size of 50 acres. The main objective of the Dripping Springs prescribed fire treatment was to create a blackened safety zone for firefighters and the public due to limited trail access. This treatment area proved to be a critical anchor point for firefighters in the 2008 Dripping Spring Fire and for the successful protection of historic structures associated with the old tuberculosis sanatorium, as well as the A. B. Cox Visitor's Center at Dripping Springs Natural Area.

The WUI refers to the transition zone between unoccupied land and human development. In Doña Ana County, where the Monument is located, the WUI is defined as a 1-mile-wide buffer from urban classified lands, agricultural lands, and major roads (Doña Ana County 2012a). These lands and communities adjacent to and surrounded by wildland are at risk of wildfires. The more WUI acres that are involved in the planning area, the more complex the situation becomes for firefighters to manage wildfire and prescribe fire to meet resource goals. Most of the acres of WUI within the Monument are along the borders near Las Cruces in the Doña Ana Mountains and Organ Mountains, and along the Rio Grande in the Sierra de las Uvas and Robledo Mountains. No WUI exists in the Potrillo Mountains.

Additional information is available in Sections 2.1.5 and 3.4, Wildland Fire Ecology and Management, of the AMS (BLM 2022a).

3.5.3 Environmental Consequences

Issue 1: How would the number of ignitions that require fire suppression affect fire resiliency and fire risks in the Monument?

Summary of Analytical Methods

The best available scientific literature and GIS data were reviewed and analyzed to summarize this section. The project area described in this section is the area within the Monument and the WUI areas surrounding it.

Indicators

The indicators for fire risk and resilience are:

- Number of ignitions that require suppression

Assumptions

- A direct relationship exists between fuel loading and potential fire intensity and severity.
- Management under all alternatives would not directly change the sources of wildfire ignitions.

Impacts Common to All Alternatives

Under all alternatives, areas containing hazardous fuels buildup would receive focused treatments to reduce the risk of ignitions that require fire suppression. Treatments would also focus in areas of public land that are adjacent to communities that are more susceptible to escaped fires or where the loss of life and property would be high. By removing potential fuels, treatments would also reduce the risk of unplanned ignitions and escaped fires in and around populated areas.

Alternative A (No Action Alternative)

Alternative A would focus on treating lands in FRCC 2 and 3 and maintaining Class I. This management direction would apply to any other resources that have the potential to be affected by wildland fire suppression and management, in particular cultural and vegetation resources, by focusing resources on the areas that are more susceptible to severe fire (see **Section 3.13**, Cultural Resources and **Section 3.4**, Vegetation Communities). These efforts could potentially reduce severe wildland fires, especially escaped fires in the more severe condition classes, by reducing fuel loads in those areas. However, the BLM would not implement additional mechanical and chemical treatments, such as; therefore, the potential for severe wildland fires would likely remain the same as it is under current management.

Under Alternative A, management would focus in the 18 WUI areas as defined in Cooperating with the New Mexico State Forestry Division (BLM 2004b). This would continue to reduce the potential for a fire to cause property damage and loss of life (see **Section 3.23**, Public Safety).

Action Alternatives (Alternatives B through D)

The action alternatives would focus on protecting, restoring, and maintaining the ecological integrity of native communities through fuels treatments, such as mechanical and chemical treatments and prescribed burning. These treatments would focus on supporting a diversity of wildlife on fire-adapted ecosystems.

The action alternatives would decrease the potential for severe wildfires through these treatment methods and the development of a district-wide fire management plan. The BLM would take measures to educate the public to reduce the risk of human-caused ignitions and to use natural ignitions to treat areas, whenever possible. This would reduce the fire risk and increase fire resiliency to a higher degree than management under Alternative A.

Like Alternative A, the action alternatives would also use fire suppression as necessary; however, each action alternative would work to reduce the cost and increase the effectiveness of suppression.

The action alternatives would continue to implement the prescribed fire and fuel reduction treatments in Dripping Springs and the fuels reduction treatments in and around the WUI to reduce public safety risk from wildfires. The action alternatives would also identify other recreation areas where prescribed fire or other fuels treatments should be implemented for public safety (see **Section 3.23**, Public Safety). These actions would reduce the risk of ignition and spread in areas in and around the WUI, thus reducing the risk of damage to humans and property.

Cumulative Impacts

The cumulative impact area for fire and fuels management is the planning area and the surrounding WUI communities. The reasonably foreseeable future projects in the area that will improve recreation and visitor use, such as maintenance to parking lots, toilet facilities, and trail accessibility, will likely cause an increase in recreational use; therefore, these projects will likely cause an increased risk of potential unplanned, human-caused ignitions. These increases in ignitions will occur over the short- and long- term and are likely to continue in a similar pattern to past ignitions. They need to be counteracted by actions that would make the landscape more fire resistant and resilient in the short and long term.

Without the management actions in the proposed action, the no action alternative would likely see an increase in ignitions, decreasing air quality and visual and scenic quality and potentially cause property damage or threaten human health and safety. These resources also have the potential to be impacted under the proposed action, but because of the management actions and treatments proposed, the impact would likely be smaller and less severe.

3.6 GEOLOGICAL RESOURCES

3.6.1 Key Points

- Impacts on geological resources would be minimal because the decision area is closed to future mineral development, and motorized vehicle use in the Monument would be limited to designated routes under all alternatives.
- Potential impacts on unique geological features from recreation uses and increased visitor use would be reduced under Alternatives B and C and increased under Alternative D, compared with Alternative A.

3.6.2 Affected Environment

Portions of four major physiographic provinces are within the boundaries of New Mexico: the Colorado Plateau, Basin and Range, Southern Rocky Mountains, and Great Plains. The planning area is entirely within the Basin and Range province, which contains the Rio Grande Rift, a dominant tectonic feature that has influenced the geomorphic features and geological history of the planning area. Most of the planning area

has been subjected to severe deformation by Cenozoic extensional tectonism² associated with the Rio Grande Rift.

The Organ Mountains unit contains the planning area's oldest rocks (Mesoproterozoic). These are found in the central and western flanks of the northern Organ Mountains (Seager 1981). The oldest rocks are granites dated 1.45–1.35 billion years ago (Seager 1981; NMBGMR 2003).

Early and Middle Paleozoic time (541–322.2 million years ago) is represented in the planning area in three main areas: 1) within the Organ Mountains unit at the North Franklin Mountains and Bishop Cap, 2) along the Torpedo-Bennett Fault Zone on the northwestern flank of the Organ Mountains (roughly from Fillmore Canyon north to US Route 70), and 3) the Robledo Mountains of the Robledo and Sierra de las Uvas Mountains unit. Formations in these areas are made up of the oldest sedimentary rock in the planning area, primarily consisting of limestone and shale deposited in shallow marine paleoenvironments.³

Pennsylvanian (323.2–298.9 million years ago) and Permian (298.9–251.9 million years ago) rocks in the planning area represent almost 55 million years of continuous deposition (Seager 1981). This was in part due to the complete and continuous flooding of New Mexico by the sea, and the expanding and sinking Orogrande Basin (Seager 1981). Rocks of Pennsylvanian and Permian age are found in the East Potrillo Mountains in addition to the three areas listed above. In the planning area, rocks from this time are mostly marine limestones and shales, but the Robledo Mountains contains terrestrial sandstones and mudstones.

Rocks from the Mesozoic era (251.9–66 million years ago) are largely absent from the planning area. Early Cretaceous marine sandstones, limestones, and shales are present in the East Potrillo Mountains of the Potrillo Mountains unit.

Beginning approximately 75 million years ago in the Late Cretaceous period and ending about 55 million years ago in the late Paleocene epoch, the Laramide orogeny created the Rocky Mountains throughout the western United States. During this time, pyroclastic mud flows and basin-fill from the erosion of uplifted areas were deposited in the planning area.

Between the Late Eocene (approximately 36 million years ago) and early Miocene (approximately 27 million years ago), the planning area experienced an intense period of volcanism called the ignimbrite flare up. The volcanic deposits associated with these eruptions are today the bulk of the Organ, Doña Ana, and Uvas Mountains, and Rough and Ready, Sleeping Lady, and Cedar Hills.

The Rio Grande Rift system bisects New Mexico, extending north into southern Colorado and south into Mexico. Initial extension in the planning area may have begun during the previous Oligocene (33.9–23 million years ago) volcanism (Mack et al. 1998); however, most activity occurred in the Miocene (23–5.3 million years ago), resulting in the uplifting of most of the modern mountains in the planning area. The most recent volcanic activity in the planning area occurred 80,000–15,000 years ago in the Potrillo Mountains unit. Magma used the faults associated with the Rio Grande Rift as conduits to the surface, forming hundreds of cinder cones, three maars, multiple lava flows, and the Aden Crater shield volcano.

² Stretching and thinning of the earth's crust

³ The prevailing environment at a particular time in the geological past

See **Figure 3-4** for a map of geological features in the Monument. Additional information is available in Sections 2.1.6 and 3.5, Geological Resources, of the AMS (BLM 2022a).

Currently, designated wilderness areas and ACECs include unique geological features associated with the region's intense volcanic past, such as lava flows, cinder cones, craters, quartz monzonite spires, igneous and volcanic cliffs, and tilted bedrock, rhyolite, and tuffs. Many eroded features also exist, such as mesas, buttes, rocky canyons, and caves. These areas are described in further detail under **Section 3.19**, Special Designations. Designated areas with unique geological features within the planning area include the Aden Lava Flow Wilderness and the Kilbourne Hole NNL.

3.6.3 Environmental Consequences

The analysis area for geological resources includes approximately 45 geological groups and formations that encompass the Monument and extend into Doña Ana, Luna, Sierra, and Otero Counties in New Mexico and El Paso County in Texas.

Issue 1: How would recreation uses and increased visitor use affect unique geological features?

Summary of Analytical Methods

The analysis uses GIS data for areas limited to designated roads in the Monument overall and the Kilbourne Hole NNL to compare potential disturbance from OHV use under each alternative. Impacts from recreational shooting are estimated based on whether the use is restricted. Disturbance from recreation uses and increased visitor use over the life of the plan that results in erosion or damage to unique geological features would be permanent.

Indicators

- Presence of unique geological features

Assumptions

- More unique geological features likely exist in the planning area than are currently inventoried.
- Geological features are subjective to visitor opinion (researcher versus the casual visitor).
- Impacts on geological resources would be minimal because the decision area is closed to future mineral development.
- Increased awareness of geological resources in the decision area may increase public interest and visitation to unique geological features.

Impacts Common to All Alternatives

Recurrent OHV use can erode and damage poorly lithified rock units. These impacts would be minimal because motorized vehicle use in the Monument would be limited to designated routes under all alternatives. Under all alternatives, unique geological features in designated wilderness would be closed to motorized OHV travel, which would prevent surface disturbance and damage to these features. Bullets used for recreational shooting could damage rock faces. Increased visitor use over the life of the plan, as described under **Section 3.16**, Recreation, would increase the potential for impacts on unique geological features from recreation uses, including shooting and OHV travel.

Under all alternatives, climate change could increase the frequency and severity of weather, thereby exacerbating natural wind and water erosion and ground-disturbing activities. This would increase the potential for erosion of unique geological features under all the alternatives.

Alternative A (No Action Alternative)

Under Alternative A, motorized vehicle use would continue to be limited to designated roads on all 5,460 acres of the Kilbourne Hole NNL. The access provided by designated roads in this area would increase the potential for illegal off-road motorized use and user-created trails. In turn, this would increase the potential for related erosion or damage to unique geological features in this area. The landmark would continue to have a restriction of no shooting within the rim of the Kilbourne Hole crater. This would protect unique geological features within the crater from bullet damage. Under Alternative A, there would be approximately 253,702 acres of areas where motorized vehicle use would be limited to designated routes. Unique geological features within these areas would be at risk of erosion or damage from potential illegal off-road motorized use or user-created trails.

Action Alternatives (Alternatives B through D)

Under the action alternatives, impacts on unique geological features from off-road vehicles would be mitigated by closing areas where off-road vehicles are causing or would cause considerable adverse effects on unique geological features. Compared with Alternative A, this would reduce potential erosion and damage to these features. In addition, impacts on unique geological features from recreation uses and increased visitor use under the action alternatives could be reduced by implementing public education materials and exhibits of geological features in the Monument.

All the action alternatives would have a no-shooting restriction within the Kilbourne Hole NNL and for 0.5 miles around the crater rim. This would ensure the unique geological features in the area, including those above the crater rim (approximately 9,457 acres total), are protected from bullet damage more than under Alternative A.

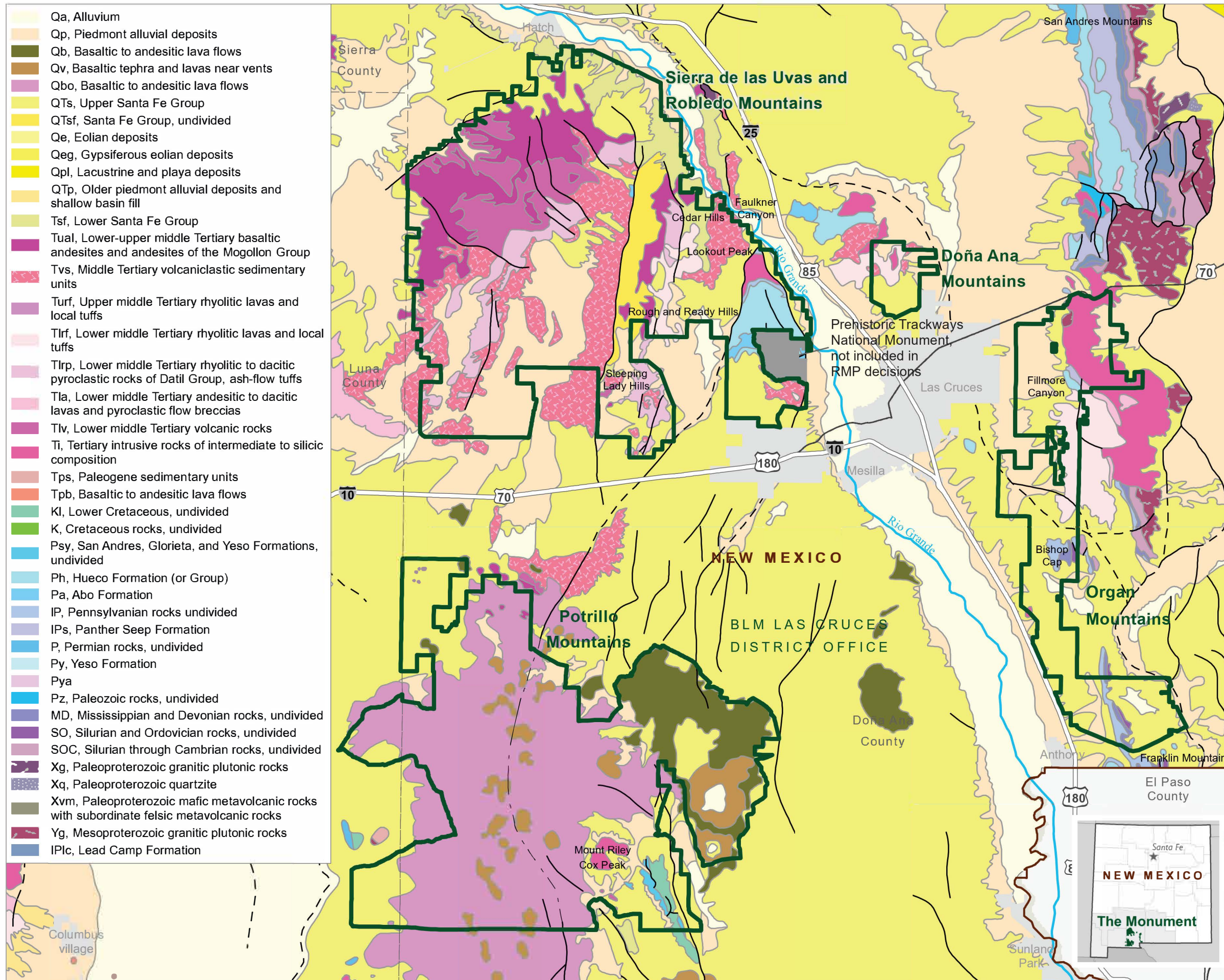
Under Alternatives B and C, the entire Kilbourne Hole NNL (5,460 acres) would be closed to motorized OHV travel. Therefore, the potential for erosion and damage on unique geological features from illegal off-road motorized use and user-created trails would be reduced under these alternatives. Under Alternative D, motorized use would be limited to designated routes in the landmark, and impacts would be similar to those described under Alternative A. However, impacts would be minimized by closing areas where adverse effects are occurring and preventing recurrence, as described above.

Compared with Alternative A, Alternative B would have 26,808 more acres closed to motorized use. This would reduce the risk of erosion or damage to unique geological features in those areas, compared with Alternative A. There would be 12,981 more acres closed to motorized use under Alternative C, compared with Alternative A. This would reduce impacts on unique geological features compared with Alternative A, though not to the same extent as Alternative B. Alternative D would have more areas where motorized use is limited to designated routes, compared with Alternative A.

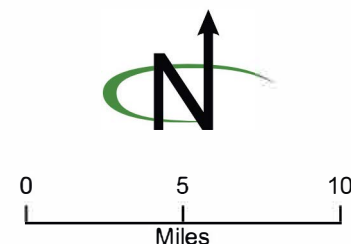


**Figure 3-4
Geological Resources in the Monument**

- Fault [concealed]: covered by another unit
- Fault [exposed]: entirely visible at the surface
- - - Fault [obscured]: intermittently exposed / obscured by colluvium
- Lithic contact [contact] lithologic
- Lithic contact [fault] contact
- Organ Mountains-Desert Peaks National Monument



- Qa, Alluvium
- Qp, Piedmont alluvial deposits
- Qb, Basaltic to andesitic lava flows
- Qv, Basaltic tephra and lavas near vents
- Qbo, Basaltic to andesitic lava flows
- QTs, Upper Santa Fe Group
- QTsf, Santa Fe Group, undivided
- Qe, Eolian deposits
- Qeg, Gypsiferous eolian deposits
- Qpl, Lacustrine and playa deposits
- QTp, Older piedmont alluvial deposits and shallow basin fill
- Tsf, Lower Santa Fe Group
- Tual, Lower-upper middle Tertiary basaltic andesites and andesites of the Mogollon Group
- Tvs, Middle Tertiary volcanoclastic sedimentary units
- Turf, Upper middle Tertiary rhyolitic lavas and local tuffs
- Tlrf, Lower middle Tertiary rhyolitic lavas and local tuffs
- Tlrp, Lower middle Tertiary rhyolitic to dacitic pyroclastic rocks of Datil Group, ash-flow tuffs
- Tla, Lower middle Tertiary andesitic to dacitic lavas and pyroclastic flow breccias
- Tlv, Lower middle Tertiary volcanic rocks
- Ti, Tertiary intrusive rocks of intermediate to silicic composition
- Tps, Paleogene sedimentary units
- Tpb, Basaltic to andesitic lava flows
- Kl, Lower Cretaceous, undivided
- K, Cretaceous rocks, undivided
- Psy, San Andres, Glorieta, and Yeso Formations, undivided
- Ph, Hueco Formation (or Group)
- Pa, Abo Formation
- IP, Pennsylvanian rocks undivided
- IPs, Panther Seep Formation
- P, Permian rocks, undivided
- Py, Yeso Formation
- Pya
- Pz, Paleozoic rocks, undivided
- MD, Mississippian and Devonian rocks, undivided
- SO, Silurian and Ordovician rocks, undivided
- SOC, Silurian through Cambrian rocks, undivided
- Xg, Paleoproterozoic granitic plutonic rocks
- Xq, Paleoproterozoic quartzite
- Xvm, Paleoproterozoic mafic metavolcanic rocks with subordinate felsic metavolcanic rocks
- Yg, Mesoproterozoic granitic plutonic rocks
- IPlc, Lead Camp Formation



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 November 17, 2023, OrganMtnsRMP_AE_resources_Geology.mxd
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Recreational shooting would not be allowed in the Doña Ana Mountains SRMA proposed under Alternatives B and C and in the southern portion of the Doña Ana Mountains SRMA under Alternative D. Compared with Alternative A, which would not have recreational shooting restrictions, these restrictions under the action alternatives would avoid damage to unique geological features in this area from bullets. Damage from recreational shooting could occur in the northern portion of the Doña Ana Mountains SRMA under Alternative D.

Impacts on unique geological features under Alternative D would be similar to those described under Alternative A. There would be approximately 3,293 fewer acres closed to motorized uses compared with Alternative A (see **Table 2-2**). This would increase the potential for erosion and damage to unique geological features.

Cumulative Impacts

The analysis area for cumulative impacts is the Monument. Past OHV use and recreational shooting, combined with other ground disturbance, such as mining, and natural wind and water erosion, have likely eroded unique geological features. This erosion can expose new unique geological features or damage existing ones. No reasonably foreseeable project in the planning area would add cumulative impacts on unique geological features under any of the alternatives.

Issue 2: How would unique geological features be affected by road and trail maintenance?

Summary of Analytical Methods

The following is a qualitative analysis of road and trail maintenance that could occur within or near areas with unique geological features in the decision area. Disturbance from construction of new routes or trails over the life of the plan that causes damage to unique geological features would be permanent.

Indicators

- Presence of unique geological features

Assumptions

- More unique geological features likely exist in the planning area than are currently inventoried.
- Geological features are subjective to visitor opinion (researcher versus the casual visitor).
- Impacts on geological resources would be minimal because the decision area is closed to future mineral development.

Alternative A (No Action Alternative)

Under Alternative A, road and trail maintenance would continue without consideration of impacts on unique geological features. This means siting of new roads and trails could expose unique geological features to additional disturbance from motorized uses, the impacts of which are described under Issue 1. In addition, the BLM would not be able to reroute existing roads and trails if unique geological features are negatively impacted.

Action Alternatives (Alternatives B through D)

Under the action alternatives, the BLM would reroute existing, and site new roads and trails, to avoid unique geological features. This would be the most effective under Alternative B because the BLM could

proactively reroute routes and trails. Under Alternatives C and D, rerouting would only occur as opportunities arise.

Cumulative Impacts

Past road and trail construction in the Monument has likely eroded unique geological features. Combined with road improvements proposed for the Aguirre Spring National Recreation Area, unique geological features would continue to be at risk from motorized vehicle disturbance and road upkeep under Alternative A. These cumulative impacts would be reduced under the action alternatives, which would allow the BLM to reroute existing or site new roads and trails to avoid unique geological features. Alternative B would provide the most protection by allowing the BLM to proactively reroute routes and trails in the planning area.

3.7 PALEONTOLOGICAL RESOURCES

3.7.1 Key Points

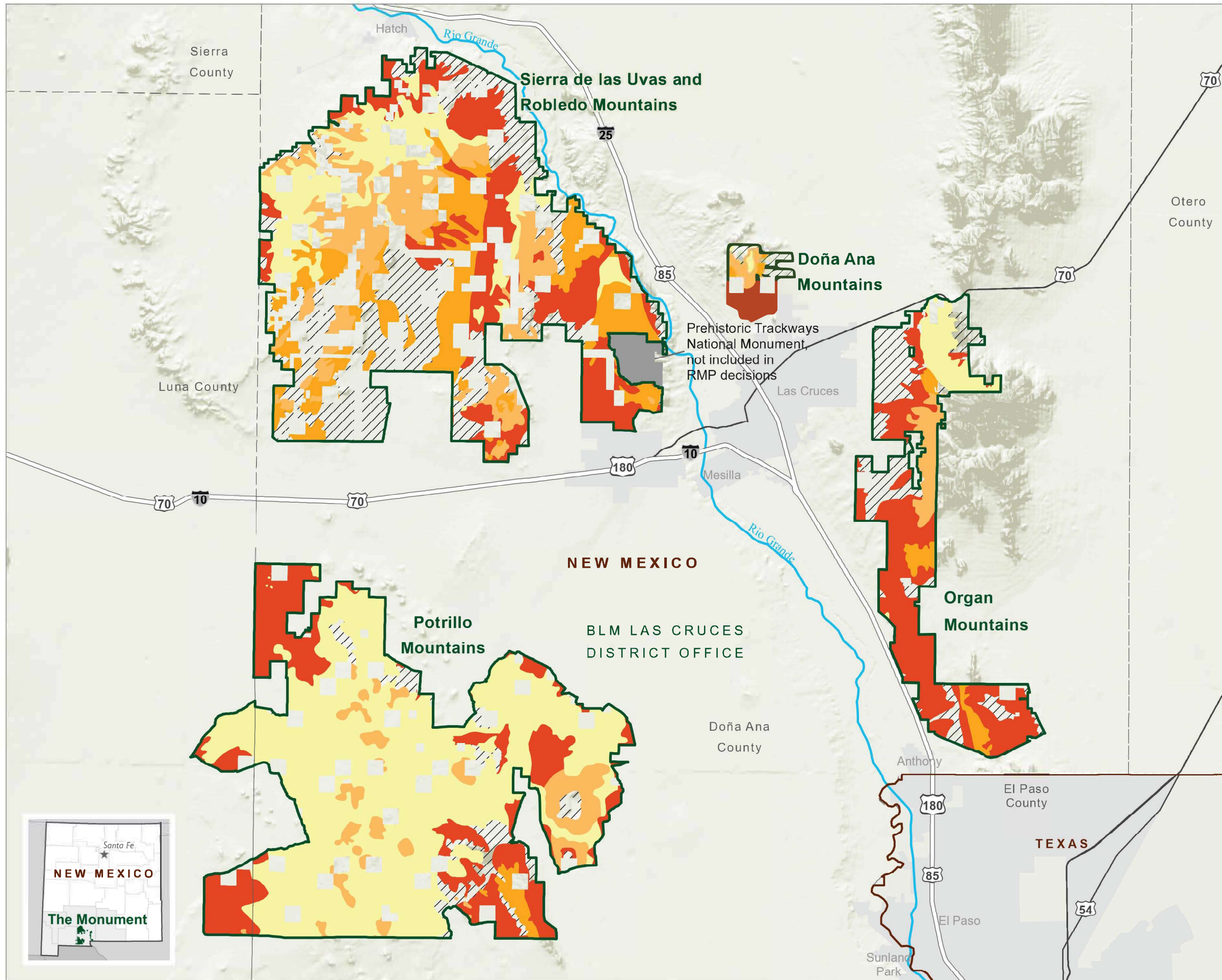
- Under all alternatives, continuing to adhere to the existing laws, such as the Paleontological Resources Preservation Act, and BLM paleontological resource policies (for example, BLM manuals and handbooks) would protect paleontological resources.
- Management actions promoting continued research and preservation of paleontological resources, which are common to all action alternatives, would have beneficial effects on paleontological resources within the decision area.

3.7.2 Affected Environment

Paleontological resources are fossilized remains, traces, or imprints of organisms preserved in the earth's crust that are of paleontological interest and provide information about the history of life on earth (Paleontological Resources Preservation Act of 2009 Section 6301; 16 USC 470aaa). Paleontological resources are managed for scientific, educational, and recreational values and to protect these resources from impacts, rules for Department of the Interior agencies governing paleontological resources preservation were recently finalized (DOI 2022). Further definition of paleontological resource and existing conditions and management is discussed in detail in Sections 2.1.7 and 3.6, Paleontological Resources, of the AMS (BLM 2022a).

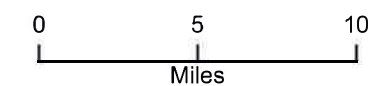
The BLM manages fossils to promote their use in research, education, and recreation in accordance with the Paleontological Resources Preservation Act, Subtitle D of the Omnibus Public Land Management Act of 2009, recent rulemaking (DOI 2022), and the general guidance of FLPMA and NEPA. The Paleontological Resources Preservation Act directs federal land managers to manage and protect fossils using scientific principles and expertise. The Paleontological Resources Preservation Act does not make a distinction between the types of organisms preserved; therefore, all plant, invertebrate, and vertebrate fossils are to be actively managed. FLPMA and NEPA do not mention paleontological resources specifically, but they mandate the consideration of scientific and natural resources, which include paleontological values.

The probability of finding paleontological resources can be broadly predicted from the Potential Fossil Yield Classification (PFYC) rank of geological units present at or near the surface. See **Figure 3-5** for a map of potential fossil yield classifications in the Monument. See **Table 3-34** for estimated PFYC acreages in the decision area.



**Figure 3-5
Potential Fossil Yield Classifications
in the Monument**

- Class 5 - very high (none present)
- Class 4 - high
- Class 3 - moderate
- Class 2 - low
- Class 1 - very low
- Unknown potential
- Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 November 27, 2023, OrganMtnsRMP_AE_resources_GeologyPFYC.mxd
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**Table 3-34
Potential Fossil Yield Classification**

PFYC Class	Total PFYC in the Decision Area (% of Decision Area)
1-Very low	177,804 (36%)
2-Low	60,252 (12.0%)
3-Moderate	47,961 (10%)
4-High	128,165 (26%)
U-Unknown	82,409 (16%)
Total Acres	496,591

Source: BLM GIS 2022

The current PFYC for New Mexico (BLM 2022b) is based on the 1:500,000-scale New Mexico State Geology Map (NMBGMR 2003). This provides for broadscale assessments of the potential to impact fossil resources; however, ideally larger-scale reassessments of the PFYC are needed to accurately predict the fossil resources for an area the size of the decision area.

Approximately 48 percent of the decision area is currently classified as very low or low potential for fossils. This is due to the prevalence of volcanic units in the planning area, including the Organ Mountains, Sierra de las Uvas Mountains, and West Potrillo Mountains, and other volcanic units associated with them (refer to Map 2.17 in the AMS [BLM 2022a]). Of the remaining acres, approximately 36 percent are classified as moderate or high potential for fossil yield. Paleozoic and Mesozoic limestones, found in the North Franklin Mountains, in Bishop Cap, along the Torpedo-Bennett Fault Zone in the Organ Mountains, and along the East Potrillo Mountains, are ranked as PFYC 3 (moderate). The Plio-Pleistocene Camp Rice Formation is ranked as PFYC 4 (high). The decision area does not contain any areas with a PFYC rank of 5 (very high) at this scale, and the remainder of the area (approximately 16 percent) is assigned the PFYC rank of unknown.

The New Mexico Museum of Natural History and Science (NMMNHS) is the US Department of the Interior-approved fossil repository for New Mexico. As such, the NMMNHS has traditionally been the fossil locality data steward for fossils of BLM-administered lands. Over 100 localities are in the Organ Mountains unit. However, most of these are isolated petrified wood fragments from gravel units. Only a few of these localities are scientifically important. Chief among them is Shelter Cave and recent vertebrate finds in the Camp Rice Formation consisting of a partial horse tooth and caudal vertebrae, partial camel humerus, partial cervid (deer) jaw, a canid hand bone, and a partial femur of the Narrow-mouthed Sloth (*Megalonyx leptostomus*).⁴ Several localities are in the Doña Ana Mountains unit, all within the Camp Rice Formation and consisting of vertebrate bone fragments and a bivalve. More fossil localities are likely to be recorded as proactive inventories continue to be conducted within the planning area and as legacy data are found and rerecorded.

⁴ C. Dunn, BLM Las Cruces District Office Monument Paleontologist, personal communication with P. Lown, AECOM resource specialist, November 2023

The Sierra de las Uvas and Robledo Mountains unit contains over 50 recorded localities; most of these are in the Robledo Mountains near the boundary of the Prehistoric Trackways National Monument. These are largely vertebrate, invertebrate, and plant trace fossils found during the initial surveys of the Prehistoric Trackways National Monument and within the geological formations both monuments share (Harbour 1972; NMMNHS 2019; SRI 2020; BLM GIS 2022). A few localities containing shark teeth are known in the northern Robledo Mountains, recorded during stratigraphic work in the area (NMMNHS 2019). Additionally, six recorded localities are in the Potrillo Mountains unit. The most important is at Aden Crater; a partially mummified Shasta ground sloth was preserved in this crater. A few of these localities feature invertebrates associated with stratigraphic work in the East Potrillo Mountains (Lucas and Estep 2000), and one locality has vertebrate material in the Plio-Pleistocene sediments within Kilbourne Hole.

Many fossil localities are near roads or recreation use areas, which makes them easily accessible. With increasing recreation use, paleontological resources face growing impacts associated with increased ground disturbance and erosion.

Scientific research is the primary use of paleontological resources in the planning area. Hobby collecting (that is, casual collection) historically existed in the planning area prior to Proclamation 9131. Paleontological resources may occasionally be looted or vandalized. The BLM handles these as a law enforcement issue, and attempts are made to recover fossil material during these occurrences.

Additional information is available in Sections 2.1.7 and 3.6, Paleontological Resources, of the AMS (BLM 2022a).

3.7.3 Environmental Consequences

Issue 1: How would the loss or removal of scientifically important fossils—without formally studying them—and areas with more intensive visitor use impact sensitive paleontological resources?

Summary of Analytical Methods

In analyzing the impact of proposed management actions on paleontological resources, the best available scientific literature and GIS data were reviewed, and the potential impacts under the four alternatives (Alternatives A through D) were compared. The project area described in this section is the decision area (BLM-administered lands). The analysis covers the time from the RMP's implementation through the life of the plan.

Indicators

- Loss or removal of scientifically important fossils without formal study
- Acres of PFYC values 4–5 that may be present where more intensive visitor use is anticipated

Assumptions

- More unique paleontological features likely exist in the planning area than are currently inventoried.
- Impacts on paleontological resources from mineral development would be negated because the decision area is closed to future mineral development.

- Increased awareness of paleontological resources in the decision area may increase public interest and visitation to unique geological features. This may help foster stewardship of important paleontological resources. It also may invite illegal fossil collection.
- Current recreation and demand in the planning area will continue and are likely to increase (see **Section 3.16**, Recreation).

Impacts Common to All Alternatives

Under all alternatives, continuing to adhere to the existing laws, such as the Paleontological Resources Preservation Act, and BLM paleontological resource policies (for example, BLM manuals and handbooks) would reduce the potential for damage to paleontological resources from authorized ground-disturbing activities. Additionally, continued scientific study by qualified researchers would allow information on paleontological resources to be compiled, resulting in better future management of, and protections for, these sensitive resources.

Management would include a determination of resource values, mitigation, and law enforcement efforts to protect the resources. As applicable, management could also include identification of collecting opportunities or on-site interpretation for public enjoyment. The BLM considers paleontological resources during environmental review of planning or projects, such as site-disturbing activities associated with ROWs or other case-by-case, site-specific projects. This would minimize opportunities for degrading paleontological resources, such as by establishing areas where surface disturbances would not be allowed.

All potential SRMAs under all alternatives contain areas of PFYC 4. Together, PFYC 3 and 4 make up 36 percent of the decision area (176,126 acres; **Table 3-17**). The BLM is considering different management prescriptions related to recreation for each alternative in these areas. It is unclear the degree to which differing management in the Doña Ana Mountains, Organ Mountains, and Picacho Peak SRMAs considered under the action alternatives, such as restricting recreational shooting and OHV use, would preserve paleontological resources inside these areas; however, the management's purpose is to reduce impacts and conflicts from recreation. It is clear that increased recreation across the Monument, expected under all alternatives, would present an increased potential for damage to paleontological resources.

Under all alternatives, 239,596 acres (**Table 2-1** and **Appendix A, Figure 2-26**, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks) within the Monument would remain designated as wilderness. This would continue to reduce the potential for impacts on paleontological resources from ground disturbance in these areas by reducing the number of potentially ground-disturbing activities that can occur there.

Under all alternatives, the casual collection of minerals, petrified wood, and fossils will continue to be prohibited in all areas of the Monument. This reduces the potential for impacts on paleontological resources from loss or removal of scientifically important fossils without formal study.

Climate change and weathering are emerging stressors on various resources, including paleontological resources. With climate change, extreme weather events are projected to increase in frequency, thereby exacerbating natural wind and water erosion and ground-disturbing activities. More frequent and more intense droughts, wildfires, and storms will increase the potential for larger, more frequent wildfires; erosion of soils; and changes in the vegetation cover. These impacts from a changing climate could adversely affect paleontological resources in the planning area.

Alternative A (No Action Alternative)

Under Alternative A, current management practices would continue, and impacts would largely be as identified under *Impacts Common to All Alternatives*. With proper avoidance, mitigation, and adherence to applicable laws and guidance protecting these nonrenewable resources, there would be no other foreseeable impacts on paleontological resources under Alternative A.

Action Alternatives (Alternatives B through D)

Under all action alternatives, greater protection would be offered to paleontological resources compared with Alternative A. The BLM would avoid most damage to paleontological localities by conducting adequate paleontological inventories in areas of known localities or in PFYC 4–5 geological units prior to implementation of projects that could damage paleontological resources. Each district would implement suitable protection measures for known paleontological localities. The BLM would continue to inventory for paleontological resources and evaluate their significance for protection, conservation, research, or interpretation. All action alternatives would preserve paleontological resources and protect them from destruction or degradation. This would also apply to materials from public lands located in museum collections. All action alternatives would facilitate appropriate paleontological research to improve understanding of fossil resources. They also would increase public education and appreciation of paleontological resources through interpretation and dissemination of research.

Alternative B would develop a comprehensive paleontological resources activity plan within 5 years of the signing of the RMP Record of Decision, including protocols for inventorying, collecting, monitoring, and education and outreach. Alternatives C and D would develop a comprehensive paleontological resources monitoring activity plan within 5 years that would establish baseline conditions of fossil resources and track changes to those resources based on management, research, and other factors (such as weathering). The activity plan under Alternative B would develop protocols for more activities beyond monitoring (inventorying, collection, education, and outreach) than the monitoring activity plan under Alternatives C and D. While the plans under Alternative B and Alternatives C and D are not identical, development of intentional activity plans and management actions promoting research and preservation of paleontological resources, common to all action alternatives, would cause more beneficial effects on paleontological resources within the decision area, as compared with Alternative A.

Cumulative Impacts

The cumulative impact analysis area for paleontological resources is the planning area. Past and present actions that have likely affected paleontological resources in this sensitive region may include such ground-disturbing activities as route and infrastructure development; mining and mineral use; unauthorized fossil collecting; recreation; and the effects of natural processes, including erosion. Increased recreation and visitation in the planning area could lead to more incidental discoveries of fossils and unauthorized fossil collection, specifically in areas of PFYC 4 and 5. The Monument's designation and the designation of the adjacent Prehistoric Trackways National Monument are actions that increase awareness of paleontological resources in the planning area. This may increase public interest and visitation to unique geological features, helping to foster stewardship of important paleontological resources. This also may invite illegal fossil collection.

Differences in cumulative impacts between the action alternatives (Alternatives B, C, and D) appear to be minimal, while the differences between these action alternatives and Alternative A are more substantial. The development of a paleontological resources activity plan/paleontological resources monitoring activity

plan, as proposed under the action alternatives, would promote strategic preservation and interpretation of important paleontological resources more than would occur under Alternative A.

Reasonably foreseeable future actions with the potential to affect paleontological resources are similar to past and present actions; however, the designation and management of the planning area as a national monument facilitates research and preservation of paleontological resources.

3.8 SOIL RESOURCES

3.8.1 Key Points

- Compared with Alternative A, the potential impacts on soils and biological soil crusts from recreation use would be reduced under Alternatives B and C and increased under Alternative D.
- The action alternatives would emphasize inventorying and monitoring of soil resources and provide more flexibility to adjust management when soils are adversely affected. Compared with Alternative A, this would reduce the erosion potential on susceptible soils and biological soil crusts from recreation uses, livestock grazing, vegetation treatments, and prescribed fire.

3.8.2 Affected Environment

Soils in the Monument are diverse, representing soils commonly found in grasslands and arid climates, as well as soils with no to very little horizon development. Soils are formed by the interaction of five factors: parent material, climate, biota (flora, fauna, and humans), topography, and time. The interaction of these five factors creates complex and diverse soil patterns across the landscape that influence soil resource use and management. Soils are living, dynamic systems that are the interface between agriculture, rangelands, and the environment. The different properties of soils are affected by a variety of uses that may result in accelerating wind and water erosion.

In accordance with *Interpreting and Measuring Indicators of Rangeland Health* (Pellant et al. 2020), the BLM uses 17 indicators to gauge the three rangeland health attributes—soil/site stability, hydrologic function, and the integrity of the biotic community of selected rangeland ecological sites. These indicators are used in conjunction with BLM guidance (43 CFR 4180.1, Rangeland Health Standards Handbook, and BLM Manual Section 4180: Rangeland Health Standards) in assessing rangeland health.

Wind and water erosion are the major soil resource concerns in the planning area, especially in places where there is very little to no vegetation ground cover. Wind erosion is the movement of soil particles due to wind direction and speed, which results in the displacement or loss of topsoil in some areas, increased sediment deposition in other areas, and impacts on ambient air quality from elevated dust levels. Wind erodibility is greatest for sandy soils and soils with minimal rock fragments.

Water erosion is the detachment and removal of soil material by water. Surface disturbance that applies force to the soil surface can cause compaction that squeezes particles together and decreases the pore spaces between them (NRCS 2001). This can also decrease water infiltration and increase potential runoff.

Wind and water erosion have naturally occurred over time in the Monument. Soil landscape position, steepness of slope, physical properties (including texture and structure), and chemical properties contribute to susceptibility to wind and water erosion. As a result of high summer temperatures, undependable rainfall, low soil fertility, and shallow topsoil depth, revegetation can be difficult if the native vegetation becomes seriously depleted.

For many arid and semiarid western rangelands soils, the sustainable soil loss rate is estimated at less than or equal to 2.2 tons per hectare, per year, due to its shallow depth, low organic matter content, and slow rate of soil formation in erratic and dry climates (Weltz et al. 2014). According to Weltz et al. 2014, soil loss rates of 2.2 to 4.5 tons per hectare, per year, put the long-term sustainability of these rangelands at risk, and soil loss rates greater than 4.5 tons per hectare, per year, are unsustainable.

Soils with high silt content are the most susceptible to water erosion, compared with clay and sand, because their particles are easily detached from each other and transported by water as runoff. Typically, after being saturated by water, these soils also form physical crusts, which seal the soil surface. Water infiltration decreases and the potential for runoff increases as the crusts thicken (Pellant et al. 2020). In the decision area, approximately 57,010 acres of soils have silt content greater than 30 percent (BLM GIS 2022), which encompasses any soil with a moderate to high composition of silt, in combination with clay and sand. This acreage is an estimate based on the major soil type in each soil map unit of the respective soil survey for the planning area; it is not representative of site-specific soil textures. Soils in this group are shown in **Figure 3-6, Soils with Silt Content Greater than 30 Percent**. This figure was developed by selecting data in the decision area for the percent silt attribute from the Natural Resources Conservation Service Soil Survey Geographic Database (NRCS 2022), an online application used for accessing soil data and information produced by the National Cooperative Soil Survey. The percentage of silt content is given as the weight of the soil material between 0.002 and 0.05 millimeters divided by the weight that is less than 2 millimeters (that is, all sand, silt, and clay particles).

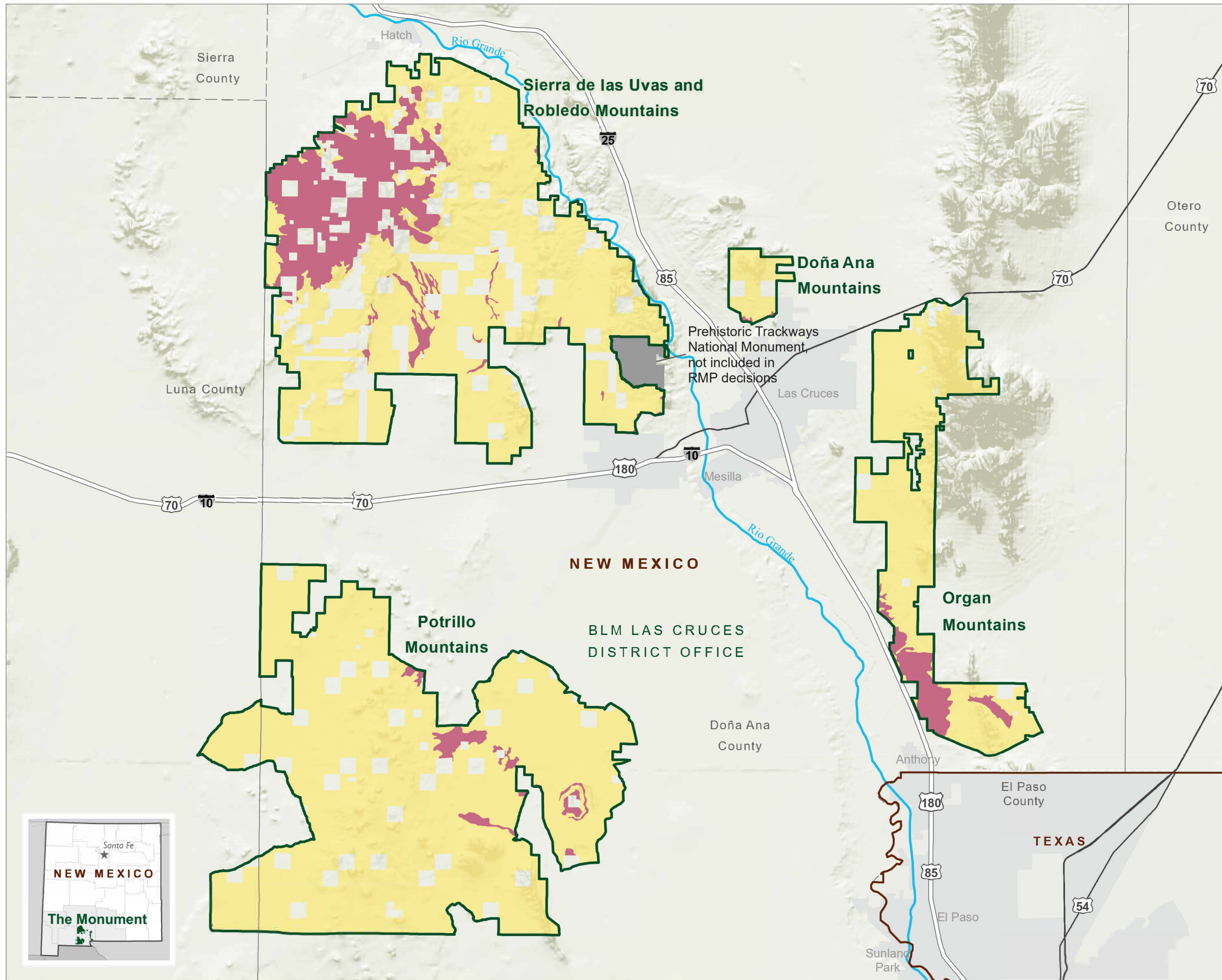
The slope can be used to determine where areas are more vulnerable to erosion. The slope influences surface flow (the lateral movement of water on the soil surface) and subsurface flow (the lateral movement of water through soil layers), which can result in runoff and soil erosion. In general, runoff generation and soil erosion typically increase as the percent slope increases. South-facing slopes are more vulnerable to high evaporation rates and generally have more shallow soils than north-facing slopes (Pellant et al. 2020). When disturbed, erosion from steeper slopes can lead to an increase in sedimentation, a loss of soil nutrients, and a decrease in soil productivity. Soil productivity is the capacity of a soil to produce plants (Weil and Brady 2019). Approximately 79,240 acres (13.8 percent) of slopes greater than 10 percent are in the decision area (BLM GIS 2021; see **Figure 3-7, Slopes Greater than 10 Percent**).

The Natural Resources Conservation Service uses runoff potential ratings for soils that are ranked between very low and very high. Soils rated as high or very high for runoff potential would be the most susceptible to erosion. **Table 3-35** and **Figure 3-8, Soils Runoff Potential**, show the runoff potential ratings in the decision area.

**Table 3-35
Acres of Runoff Potential Ratings**

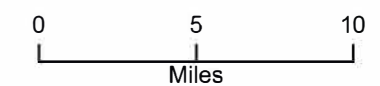
Runoff Potential	Acres	Percentage of Decision Area
Very low	50,020	10.1
Low	37,550	7.6
Medium	12,440	2.5
High	123,960	25.0
Very high	101,760	20.5
Not rated	170,760	34.4
Total	496,490	100

Source: BLM GIS 2022



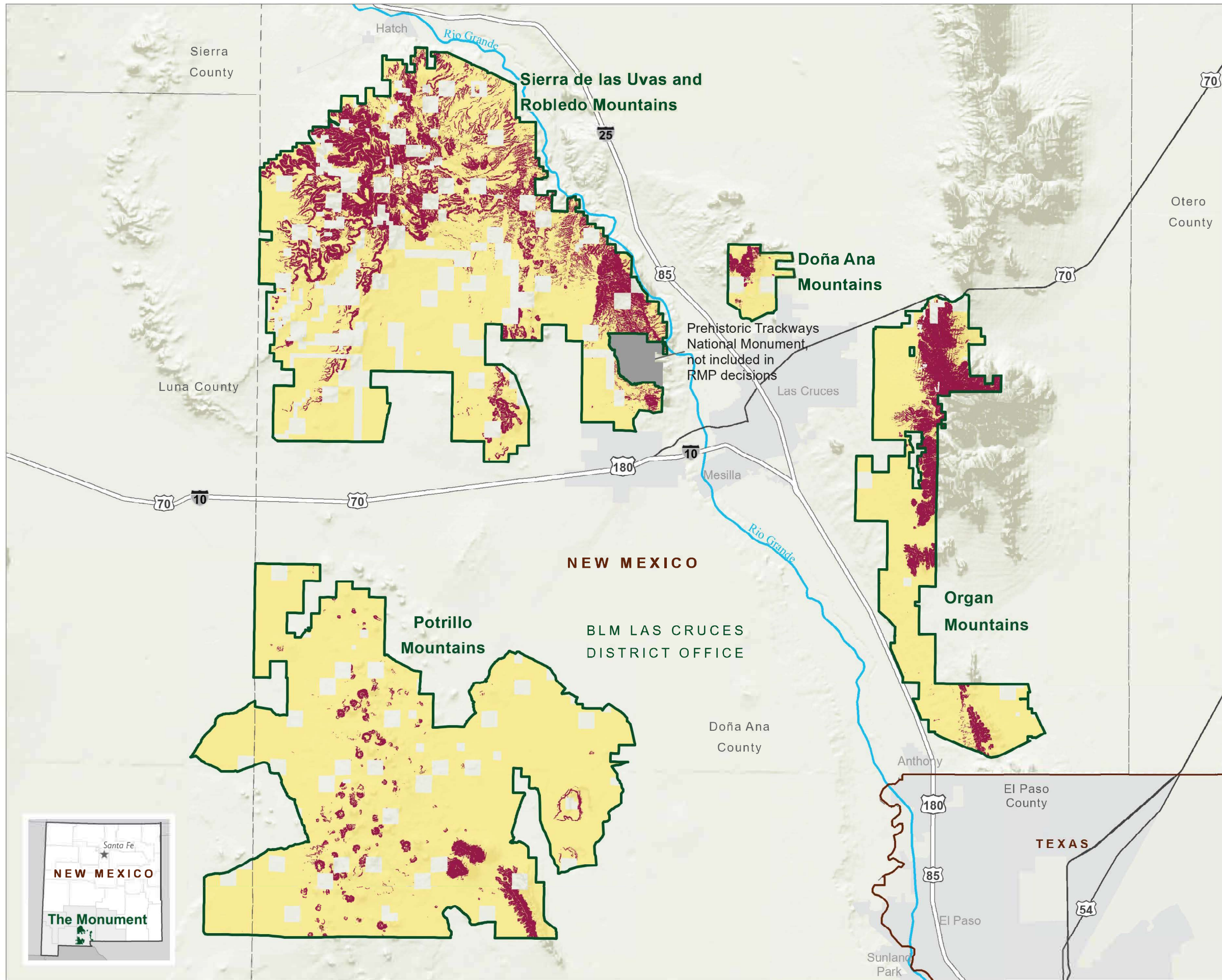
**Figure 3-6
Soils with Silt Content Greater than 30 Percent**

- Soil silt content greater than 30%
- Bureau of Land Management
- Organ Mountains-Desert Peaks National Monument



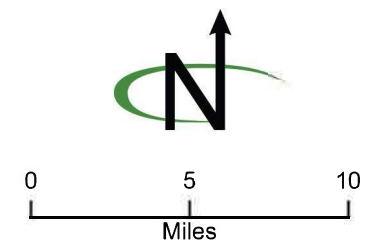
Source: BLM GIS 2022, USDA NRCS GIS 2022, Department of the Interior, Bureau of Land Management, Las Cruces District Office
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**Figure 3-7
Slopes Greater than 10 Percent**

- Slope greater than 10%
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument



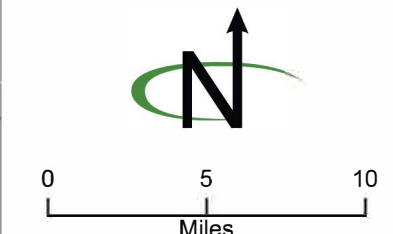
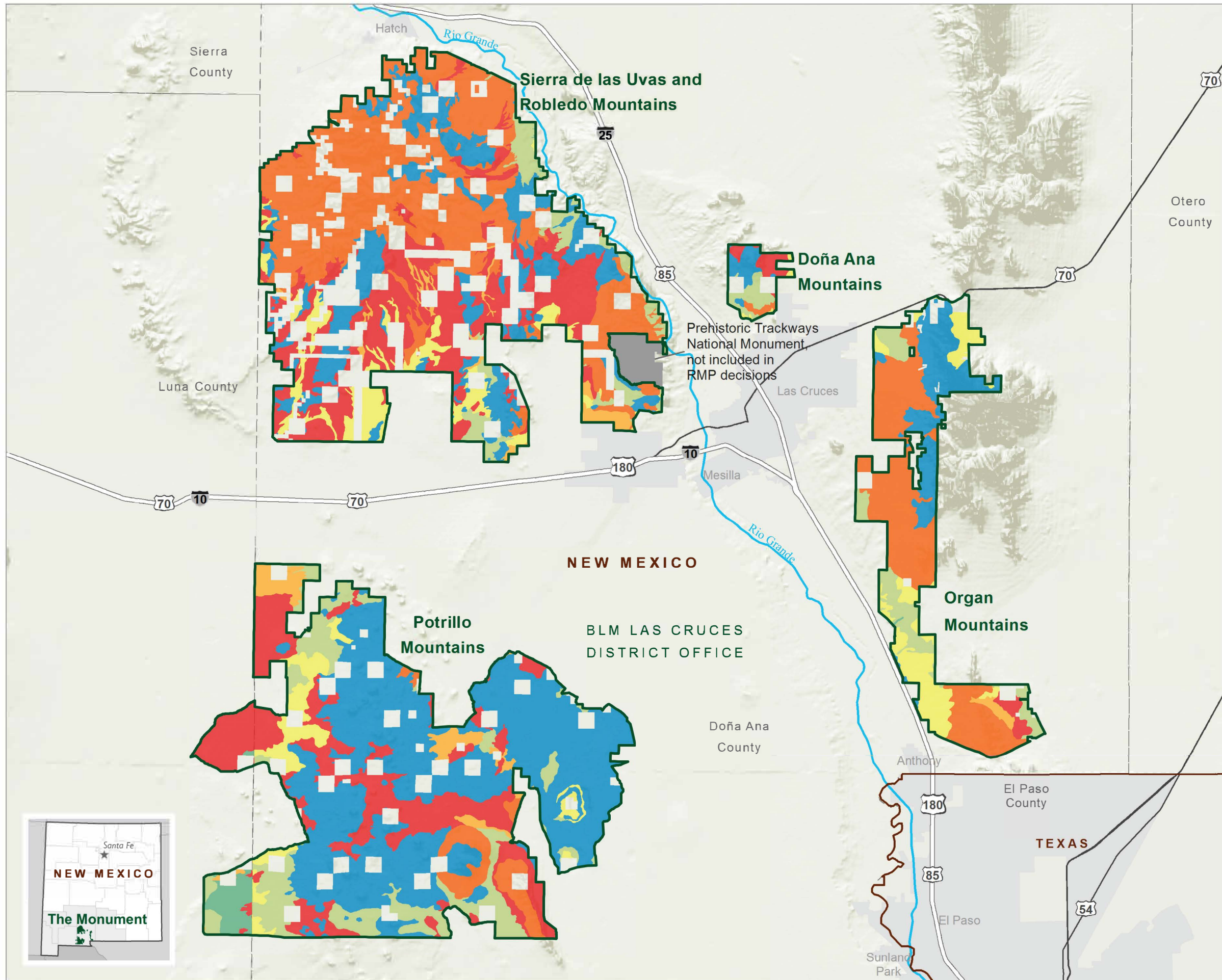
Source: BLM GIS 2022, USGS GIS 2022, Department of the Interior, Bureau of Land Management, Las Cruces District Office
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**Figure 3-8
Soils Runoff Potential**

- Very high
- High
- Medium
- Low
- Very low
- Negligible
- No data
- Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022, USDA NRCS GIS 2022, Department of the Interior, Bureau of Land Management, Las Cruces District Office
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Related to runoff potential, the Natural Resource Conservation Service also defines hydrologic soil groups A, B, C, and D (**Table 3-36**; NRCS 2009). These are classified according to the rate of water infiltration (when the soils are not protected by vegetation), after being thoroughly wetted from long-duration precipitation (NRCS 2022).

Table 3-36
Acres of Hydrologic Soil Groups

Hydrologic Soil Group	Acres	Percentage of Decision Area
Group A	58,230	11.7
Group B	26,190	5.3
Group C	92,650	18.7
Group D	192,190	38.7
Not rated	127,230	25.6
Total	496,490	100

Source: BLM GIS 2022

Soils in Group A have a high infiltration rate (low runoff potential). Water is transmitted freely through the soil. These soils consist mainly of deep, well-drained to excessively drained sands or gravelly sands.

Soils in Group B have a moderate infiltration rate. Water transmission through the soil is unimpeded. These soils consist mainly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture.

Soils in Group C have a slow infiltration rate. Water transmission through the soil is somewhat impeded. These soils usually have a layer that impedes the downward movement of water, or they are moderately fine or fine textured.

Soils in Group D have a very slow infiltration rate (high runoff potential). Water transmission through the soil is restricted or very restricted. These soils consist mainly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material.

Most (57.4 percent) of the soils in the decision area rated in groups C and D and most (45.5 percent) are rated for high or very high runoff potential.

The decision area includes biological soil crusts, which are an intimate association between soil particles and cyanobacteria, algae, micro fungi, lichens, and bryophytes (in different proportions); these live within or atop the uppermost millimeters of soil. They are found in all dryland regions of the world and in all vegetation types within these lands. In these landscapes, biological soil crusts often cover all soil spaces not occupied by trees, grasses, or shrubs, and can comprise over 70 percent of the living ground cover (Rosentreter et al. 2007).

The microscopic biocrust communities function ecologically to stabilize soils, fix nitrogen and carbon, regulate water cycling in and out of soils, capture dust, accumulate organic matter, supply nutrients to vascular plants, enhance or reduce seedling establishment, promote chemical and physical weathering, provide wildlife habitat, and regulate soil food web interactions (Rosentreter et al. 2007; Warren et al. 2021). Since 2011, the BLM has collected plot data for its AIM program. The BLM uses the AIM database,

which includes plot data for the Monument, to inventory vegetation cover. This includes biological soil crust, which is still being inventoried.

The decision area also includes physical soil crusts. These are thin layers on the soil surface that are structurally different from the material immediately beneath them. In contrast to biological soil crusts, physical crusts reduce soil porosity and water infiltration (Belnap et al. 2001; Pellant et al. 2020). They are formed when rainfall hits the soil surface and breaks up soil aggregates, allowing smaller particles to wash in. Upon drying, the soil components glue together and form a crust that is often harder than the underlying material because it contains evaporated salts and minerals. As described above, soils with higher silt content are more vulnerable to crusting, as are soils with low organic matter content and high sodium or calcium carbonate content (Belnap et al. 2001).

Additional information is available in Sections 2.1.8 and 3.7, Soil Resources, of the AMS (BLM 2022a).

3.8.3 Environmental Consequences

Issue 1: How would livestock grazing, rangeland improvements, and recreation impact soil stability and productivity?

Summary of Analytical Methods

The analysis uses GIS data for the indicators listed below to compare their acreages in SRMAs, areas limited to designated roads, and areas closed to motorized OHV travel in the decision area. Since the BLM does not yet have comprehensive data for the biological soil crust distribution in the decision area, the indicator for this resource is considered qualitatively to analyze potential impacts on biological soil crusts, wherever they may occur. Impacts from livestock and rangeland improvements are analyzed qualitatively. Soil erosion that results from recreation uses, livestock and rangeland improvements, and increased visitor use over the life of the plan would be permanent. Short-term impacts are those that generally occur within 5 years of recreational use or livestock management implementation.

Indicators

- Soils susceptible to erosion, which include the following:
- Slopes greater than 10 percent
- Soils with high or very high runoff potential
- Soils in hydrologic groups C or D
- Soils with silt content greater than 30 percent
- Presence of biological soil crust

Assumptions

- As the slope increases, the potential for erosion increases and the risk of soil instability following disturbance increases, particularly if the cover, structure, or permeability has been altered (NRCS 2001).
- Soils with high runoff potential and in hydrologic groups C and D, soils with high silt content, and soils on slopes greater than 10 percent would be the most vulnerable to erosion from surface disturbance.

- Reclamation activities would coincide with best management practices and would depend on soil resiliency, which is the soil's inherent ability to recover from impacts. In cases where soil is completely lost, soil reclamation would not be possible.

Impacts Common to All Alternatives

Livestock Grazing and Construction of Rangeland Infrastructure

Livestock trampling and trailing and grazing infrastructure can damage soils and biological soil crusts through physical disruption, including scraping and compacting. On wet soils, the effects would be comparable with those of an impermeable physical crust, as described under *Affected Environment (Section 3.8.2)*. These effects would also be most severe on bare soils, as opposed to soils with vegetation or litter cover (Pouyat et al. 2020), and if continuous grazing occurs, as opposed to rotational grazing (Byrnes et al. 2018). Livestock grazing on existing physical crusts would temporarily break up the crusts; however, the soil surface would be resealed after an intense rainstorm (Belnap et al. 2001). When grazing intensity is decreased, such as for rotational grazing, livestock grazing can increase root and water penetration in the soil (Byrnes et al. 2018; Pouyat et al. 2020).

Livestock grazing effects depend on site-specific factors, including elevation, climate, soil texture, and plant community type (Byrnes et al. 2018). Site-specific analysis of soil conditions, especially for soils susceptible to erosion, would be considered under the applicable AMP.

Displacement of soil and compaction could lead to soil erosion, especially on slopes greater than 10 percent, for soils in hydrologic groups C and D, and where biological soil crusts are present; this is because of their low water infiltration capabilities. Compaction that results in pedestalling could result in water pooling, which would increase the potential for runoff and erosion for soils with high or very high runoff potential and for soils with high silt content. In upland areas where soils are drier, livestock tend to be more dispersed. Where livestock are dispersed and the soil is dry, the potential for erosion or pedestalling would be reduced. Livestock waste could adversely or beneficially indirectly affect soil nutrient availability and organic matter accumulation (Pouyat et al. 2020).

Recreation

SRMAs enable the BLM to effectively enforce OHV use in a concentrated area, as opposed to enforcing OHV use over the entire Monument. Therefore, for all alternatives, areas where OHV use is limited to designated routes outside SRMAs would be more at risk for illegal OHV use and user-created trails. OHV use can compact soils. Compacted soils have reduced pore spaces and slow water infiltration rates, which can result in water pooling and an increased potential for water erosion (NRCS 2001a). Illegal OHV use would increase the potential for erosion in these areas where soils susceptible to erosion and biological soil crusts occur. Soils susceptible to erosion and biological soil crusts in designated wilderness would be closed to OHV travel under all alternatives. This would prevent legal OHV use and minimize illegal OHV use; thus, the potential for erosion would be reduced for these resources.

Alternative A (No Action Alternative)

Livestock Grazing and Construction of Rangeland Infrastructure

There would be 492,062 acres of active allotments under Alternative A. The impacts on soils susceptible to erosion and to biological soil crusts would be the same as those described under *Impacts Common to All Alternatives*.

Recreation

Under Alternative A, there would be more acres of soils that are susceptible to soil erosion in areas limited to designated routes than in areas closed to motorized OHV travel (see **Table 3-37**). While illegal OHV use and user-created trails could occur in areas that are closed to OHV travel, the potential would be greater in areas where this use is limited to designated routes; this is because these areas would have more OHV users. OHV use on non-designated routes would compact and displace soils and increase the erosion potential for soils susceptible to erosion and biological soil crusts. This impact would be most severe wherever the acreages for the indicators overlap. Potential surface disturbance from OHV use would have a permanent impact on affected soils; however, these soils represent only approximately 0.5 percent of the Monument's area.

Table 3-37
Acres of Indicators in SRMAs and Designated Travel Areas, Alternative A

Indicator	Acres in SRMAs	Acres Limited to Designated Routes	Acres Closed to Motorized OHV Travel
Slopes greater than 10 percent	18,238	37,064	42,178
Soils with high or very high runoff potential	27,746	137,910	87,804
Soils in hydrologic groups C or D	39,844	176,685	108,151
Soils with silt content greater than 30 percent	277	29,799	16,025

Source: BLM GIS 2022

Action Alternatives (Alternatives B through D)Livestock Grazing and Construction of Rangeland Infrastructure

Under the action alternatives, soils on slopes greater than 10 percent would be a priority for grazing management to reduce erosion. Soils with silt content greater than 30 percent would also be considered for further analysis and design and mitigation measures. The action alternatives would provide direction to maintain an appropriate percentage of vegetation cover and protective litter and rock cover to stabilize soils. In addition, the action alternatives would emphasize conducting land health assessments and meeting the indicators of rangeland health. These management actions would improve soil monitoring and provide the BLM with more flexibility to adjust grazing management. These management actions would reduce the potential impacts on susceptible soils and biological soil crusts, as described under *Impacts Common to All Alternatives*, compared with Alternative A.

Under the action alternatives, the BLM would conduct inventories for biological soil crusts in the Monument. Over the life of the plan, inventoried areas would enable the BLM to maintain, improve, and protect these areas more effectively than under Alternative A, which would have no similar action. As a result, impacts from livestock grazing and rangeland infrastructure on biological soil crusts would be reduced over the life of the plan, compared with Alternative A.

Under Alternative C, the BLM would be able to remove unnecessary fencing to be compatible with wildlife movement; there would be no similar action under Alternative A. Removing these fences would indirectly reduce surface disturbance to biological soils crusts, reduce soil compaction, and reduce erosion for soils, compared with Alternative A.

Recreation

Under the action alternatives, impacts on soils from off-road vehicles would be mitigated by closing areas where off-road vehicles are causing or would cause considerable adverse effects on soils. This would reduce the potential erosion for all indicators, compared with Alternative A.

Under the action alternatives, the acres of soils with silt content greater than 30 percent that would occur in SRMAs, areas limited to designated routes, and areas closed to motorized OHV travel would be the same as under Alternative A. Similar to Alternative A, there would be more acres of soils that are susceptible to erosion in areas limited to designated routes than in areas closed to motorized OHV travel (see **Table 3-38**). However, the acres in areas limited to designated routes would decrease for slopes greater than 10 percent, soils with high or very high runoff potential, and soils in hydrologic groups C or D under Alternatives B and C, compared with Alternative A (see **Table 3-38**). Similarly, the potential for soil erosion from OHV use would decrease under Alternatives B and C, compared with Alternative A.

**Table 3-38
Acres of Indicators in SRMAs and Designated Travel Areas, Action Alternatives**

Indicator	Acres in SRMAs	Acres Limited to Designated Routes	Acres Closed to Motorized OHV Travel
Alternative B			
Slopes greater than 10 percent	19,103	34,301	44,941
Soils with high or very high runoff potential	30,844	124,546	101,168
Soils in hydrologic groups C or D	43,270	158,036	126,800
Soils with silt content greater than 30 percent	278	29,799	16,025
Alternative C			
Slopes greater than 10 percent	5,630	34,538	44,704
Soils with high or very high runoff potential	26,809	135,015	90,698
Soils in hydrologic groups C or D	29,070	168,781	116,055
Soils with silt content greater than 30 percent	278	29,799	16,025
Alternative D			
Slopes greater than 10 percent	1,452	37,991	41,251
Soils with high or very high runoff potential	2,494	139,018	86,696
Soils in hydrologic groups C or D	4,734	178,723	106,113
Soils with silt content greater than 30 percent	0	29,799	16,025

Source: BLM GIS 2022

Alternative D would have more areas available for motorized uses limited to designated trails, compared with Alternative A. There would be approximately 926 more acres of slopes greater than 10 percent, approximately 1,108 more acres of soils with high or very high runoff potential, and approximately 2,038 more acres of soil in hydrologic groups C and D in areas limited to designated roads and trails. This would increase the potential for surface disturbance and successive erosion from illegal OHV use and user-created trails on soils susceptible to erosion and for biological soil crusts (if present).

Alternative B would provide more areas for SRMAs than Alternative A. These SRMAs would decrease the potential for illegal OHV use and user-created trails, as described under *Impacts Common to All Alternatives*. Compared with Alternative A, Alternatives C and D would decrease the areas for SRMAs. The potential for increased illegal OHV use and user-created trails outside SRMAs would be more severe under Alternative D; this is because the Organ Mountains SRMA would be undesignated, and no additional

SRMAs would be designated. With only one SRMA remaining (the Doña Ana Mountains SRMA), the potential for illegal OHV use and user-created trails throughout the Monument would increase. In turn, this would increase the potential for soil erosion and surface disturbance on biological soil crusts.

Inventorying biological soil crusts, as described above, would enable the BLM to protect these resources more effectively than under Alternative A, which provides no similar action. Therefore, impacts from recreation uses on biological soil crusts would be reduced over the life of the plan, compared with Alternative A.

Cumulative Impacts

The analysis area for cumulative impacts is BLM-administered lands in the planning area. The reasonably foreseeable future projects in the area that will improve recreation and visitor use, such as maintenance to parking lots, toilet facilities, and trail accessibility, will likely cause an increase in recreational use. This would increase the potential for illegal OHV use and user-created trails and successive soil erosion under all alternatives. This cumulative effect would be most severe under Alternatives A and D because they would have the most areas managed as limited to designated routes.

Issue 2: How would prescribed fires and vegetation treatments affect soil stability and productivity?

Summary of Analytical Methods

The following is a qualitative analysis of vegetation treatments and prescribed fire that could occur within or near the soil indicators described below. Short-term impacts include those that generally occur within 5 years of implementing vegetation treatments and prescribed fire management. Long-term impacts occur over the life of the plan.

Indicators

- Soils susceptible to erosion, which include the following:
- Slopes greater than 10 percent
- Soils with high or very high runoff potential
- Soils in hydrologic groups C or D
- Soils with silt content greater than 30 percent
- Presence of biological soil crust

Assumptions

- As the slope increases, the potential for erosion increases and the risk of soil instability following disturbance increases, particularly if the cover, structure, or permeability has been altered (NRCS 2001).
- Soils with high runoff potential and in hydrologic groups C and D, soil with high silt content, and soils on slopes greater than 10 percent would be the most vulnerable to erosion from surface disturbance.
- Reclamation activities would coincide with best management practices and would depend on soil resiliency, which is the soil's inherent ability to recover from impacts. In cases where soil is completely lost, soil reclamation would not be possible.

Impacts Common to All Alternatives

Mechanical vegetation treatments can compact and displace soils and decrease soil stability by removing vegetation cover and increasing bare ground (Condon and Gray 2019). This increases the erosion susceptibility, especially for soils on slopes greater than 10 percent, and makes soils less resistant to degradation (Pellant et al. 2020). Chemical treatments also reduce the vegetation cover, though not as severely as mechanical treatments reduce the vegetation cover (Condon and Gray 2019). In the short term, use of prescribed fire under the action alternatives would burn soils and the biological soil crust. However, burns from a prescribed fire would not be as severe or widespread as burns from wildfire. Over the life of the plan, mechanical and chemical vegetation treatments and prescribed fire would reduce fuels loading and the potential for severe wildfires and soil burning.

Climate change could increase the frequency and severity of weather, thereby exacerbating natural wind and water erosion. This would increase the potential for soil erosion under all the alternatives. Climate change could also increase the frequency or severity of wildfires. In conjunction with wildfire ecology management and vegetation treatments, the potential for soil burning and erosion from wildfires would be most severe under Alternative A.

Alternative A (No Action Alternative)

As described under **Section 3.5**, Wildfire Ecology and Management, the potential for severe wildfires under Alternative A would likely continue. Severe burning can decrease soil microorganism abundance and cause the soil surface to become water repellent. In both cases, this would reduce the capacity for water infiltration and for the soil to effectively hold water (Weil and Brady 2019). This would increase the potential for water runoff and erosion on all soils susceptible to erosion and where biological soil crusts occur, but especially for soils with high or very high runoff potential and soils in hydrologic groups C or D.

Under Alternative A, the BLM would not use chemical vegetation treatments within one-half mile of areas with slopes greater than 10 percent. Avoiding treatments on these slopes would increase soil stability and reduce the potential for erosion.

Action Alternatives (Alternatives B through D)

Under the action alternatives, short-term impacts from vegetation treatments on soils susceptible to erosion and biological soil crusts would be similar to those described under *Impacts Common to All Alternatives*. However, the BLM would reduce surface disturbance to ensure that vegetation and protective litter and rock cover are maintained at an appropriate percentage. Where an appropriate percentage is maintained, soil stability would also be maintained or improved, which would decrease the potential for soil erosion.

Under the action alternatives, the BLM would conduct inventories for biological soil crusts in the Monument. Over the life of the plan, inventoried areas would enable the BLM to maintain, improve, and protect these areas more effectively than under Alternative A, which would have no similar action.

Cumulative Impacts

No reasonably foreseeable project in the planning area would add cumulative impacts on soils susceptible to erosion or biological soil crusts. Therefore, there are no incremental cumulative impacts under any of the alternatives.

3.9 CAVE AND KARST RESOURCES

3.9.1 Key Points

- Cave ecosystems; cave-dependent species; and cave resources, including cultural and paleontological resources, are primarily affected by Monument users entering and recreating within caves. Alternative B would provide the greatest reduction in impacts by directing the BLM to close caves with suitable bat habitat to all non-permitted use, except traditional Tribal use.
- Karst areas are typically affected by the development of infrastructure occurring on the karst formations. No infrastructure development on known karst formations is proposed or anticipated to occur under any of the alternatives.

3.9.2 Affected Environment

According to the Federal Cave Resources Protection Act (16 USC 4301 et seq.), a cave is “any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade. Such term shall include any natural pit, sinkhole, or other feature, which is an extension of the entrance.”

Karst is a type of landscape formed by the dissolution of soluble carbonate rocks (limestone, dolomite, or marble) or evaporites (gypsum or anhydrite). Karst regions contain aquifers that are capable of providing large supplies of water. Natural landscape features typical of karst regions include caves, springs, and sinkholes, which result from the action of groundwater dissolving and depositing soluble minerals within the formation.

The total number of caves and karst features in the planning and decision areas is currently unknown. The Federal Cave Resources Protection Act prohibits the BLM from publishing the location of caves; however, most known caves are in wilderness areas, which provide some protection by making them more difficult to access. Caves exist in both volcanic and limestone areas in the Monument, and most are shallow shelter caves rather than extensive networks.

Cave ecosystems can provide essential habitat to certain forms of wildlife and vegetation. Caves in the Monument provide habitat to bats, which have been declining across North America due to impacts from white-nose syndrome. While white-nose syndrome has not been detected within the Monument to date, *Pseudogymnoascus destructans*, the causal agent of the disease, has been spreading across the western United States in recent years. Long-term surveillance for white-nose syndrome is needed to ensure adequate protection of cave-dwelling bats within the Monument.

Cave ecosystems can be sensitive to changes in surrounding conditions, including groundwater conditions, airflow and quality, wildfire and fire management actions, and physical disturbance by visitors. Many of the known caves in the Monument have suffered damage from vandalism or related to recreational use, such as visitors having fires and making campsites in the caves.⁵

Karst formations, which are present at the surface, can be impacted by natural and human-caused activities, such as changes to drainage patterns, changes in water chemistry, and installation of foundations for

⁵ Colin Dunn, BLM geologist and paleontologist, conversation with Francis Craig, AECOM geologist, on June 21, 2022, regarding the condition of caves and karst areas in the Monument.

buildings and towers, and surface disturbance. Sinkholes and passages can open unexpectedly as a result of changes to groundwater flow patterns.

Additional information is available in Sections 2.1.9 and 3.8, Cave and Karst Resources, of the AMS (BLM 2022a).

3.9.3 Environmental Consequences

Issue 1: How would cave ecosystems, cave resources, and cave-dependent species be affected by travel management, recreation, and development resulting from the proposed management changes?

Summary of Analytical Methods

The spatial analysis area is the Monument boundary. The temporal analysis is the life of the Monument plan. Much of the damage to caves, cave ecosystems, and cave-dependent species is caused by vandalism, fires, and other impacts associated with cave visitation. These impacts disturb cave-dependent species, harm air and water quality, and disrupt the ecosystem within caves. Any management decisions that would reduce the number of visitors entering caves would result in a reduction in these impacts.

Indicators

- Acres closed to motorized or mechanized vehicle travel
- Travel management goals or guidance to close and rehabilitate unneeded roads
- Direction or actions that would prevent or reduce cave visitation and use

Assumptions

- Reducing the ease of access to caves by closing areas of the Monument to motorized and mechanized vehicle use, as well as closing and rehabilitating unneeded roads, would reduce visitation of some caves; this would result in less damage to cave ecosystems and cave-dependent species.
- Closing caves to all use other than permitted and traditional Tribal uses would be enforced with a physical barrier, such as bat-friendly gates, which would prevent unauthorized access.

Impacts Common to All Alternatives

Under all alternatives, Monument plan management direction instructs that the BLM close and rehabilitate unneeded roads. This could reduce the use of closed, but not reclaimed, roads and unneeded roads that might allow easy access to caves in some areas. This could reduce cave visitation, resulting in a reduction in impacts associated with cave visitation, such as vandalism, theft, or disturbance of cave resources and cave ecosystems.

Climate change is likely to result in increases in temperatures and changes in precipitation amounts and patterns. The spread of diseases, such as white-nose syndrome, among cave-dependent species by natural processes or human actions is likely to continue. Under all alternatives, management actions and guidance will continue to direct that actions are protective of cave ecosystems and cave-dependent species. No other planned or reasonably foreseeable projects in the Monument are likely to result in additional or cumulative impacts on cave ecosystems and cave-dependent species.

Alternative A (No Action Alternative)

Under Alternative A, the BLM would close 242,889 acres of the Monument to motorized vehicles; motorized vehicles would be limited to designated routes on 253,702 acres. Under Alternative A, the BLM would close 239,596 acres of the Monument to mechanized vehicles; mechanized vehicles would be limited to designated routes on 256,994 acres.

This alternative would continue current management and continue to allow vehicular or mechanized access on designated routes across much of the Monument, including on routes that may lead to some caves in the Monument. Impacts on caves and cave resources associated with visitation would continue at current levels or increase, if visitor levels increase as expected.

Action Alternatives (Alternatives B through D)

Under Alternative B, the BLM would close 269,697 acres of the Monument to motorized vehicles; motorized vehicles would be limited to designated routes on 226,894 acres. Under Alternative B, the BLM would close 239,596 acres of the Monument to mechanized vehicles; mechanized vehicles would be limited to designated routes on 256,994 acres. Under Alternative C, 255,870 acres of the Monument would be closed to motorized vehicles; motorized vehicles would be limited to designated routes on 240,721 acres. Under Alternative C, 239,596 acres of the Monument would be closed to mechanized use; mechanized use would be limited to designated routes on 256,994 acres. Under Alternative D, the BLM would close 239,596 acres of the Monument to motorized vehicles; motorized vehicles would be limited to designated routes on 256,994 acres. Under Alternative D, 239,596 acres of the Monument would be closed to mechanized use; mechanized use would be limited to designated routes on 256,994 acres.

All the alternatives propose the same management of mechanized use. As a result, any impacts on caves and cave resources resulting from mechanized access would be the same across all alternatives.

Of the proposed alternatives, Alternative B would close the greatest area of the Monument to motorized vehicles, resulting in the greatest reduction in ease of access to some caves. Compared with Alternative A, Alternative C would close more acres of the Monument to motorized vehicles, which would reduce the ease of access to some caves. Both Alternatives B and C would result in a reduction in impacts on cave resources compared with Alternative A. Alternative D would close fewer acres in the Monument to motorized vehicles than Alternative A; therefore, the effects on caves and cave resources under Alternative D would be increased, compared with under Alternative A.

Under Alternatives B through D, all caves with suitable bat habitat in the Monument would require a permit for use, except traditional Tribal use. This would close caves to use by most Monument visitors, except permitted spelunkers, scientists with permission to study the caves, and traditional Tribal users. This would likely prevent much of the vandalism and accidental damage to cave resources. Compared with Alternative A, which does not propose this measure, Alternatives B through D would provide a higher level of protection to cave ecosystems and resources.

Cumulative Impacts

Numerous caves exist across the cumulative impacts analysis area of the Monument boundaries. Actions outside this area are unlikely to result in notable effects on cave ecosystems and cave-dependent species. Cave ecosystems in these caves and the cave-dependent species that rely on them can be impacted by a variety of external factors, such as pollution, disturbance from visitors, changes in temperature, and

changes in water availability or flow patterns. Recreation visits to the Monument are expected to increase over time, which could result in additional visits to caves and associated disturbance. Because Alternatives B through D would require a permit for use, except traditional Tribal use, for all caves with suitable bat habitat, they are likely to result in a reduction in cumulative impacts compared with Alternative A.

Issue 2: How would the probability for caves to be surveyed for potential listing as significant under the Federal Cave Resources Protection Act change under the range of alternatives?

Summary of Analytical Methods

The spatial analysis area is the Monument boundary. The temporal analysis is the life of the Monument plan. The analysis evaluates how management direction would improve information about cave resources, accelerate the surveying process, or otherwise result in some caves being surveyed for potential listing as significant under the Federal Cave Resources Protection Act.

Indicators

- Direction or actions in the Monument plan that would result in cave surveys or otherwise increase knowledge about cave resources in the Monument
- Direction or actions that would protect potentially significant cave resources until a cave survey for potential listing as a significant cave can be completed

Assumptions

- The Monument has sufficient budget and staff available to carry out cave-related management direction.

Impacts Common to All Alternatives

Under all alternatives, management would comply with the Federal Cave Resources Protection Act of 1988, as amended. The act prohibits the disclosure of locations of significant caves, removal of cave resources, and vandalizing or disturbing cave resources.

Alternative A (No Action Alternative)

Under Alternative A, management direction instructs Monument staff to conduct an inventory of cave resources and manage caves in accordance with the Federal Cave Resources Protection Act of 1988 and related BLM policy. No timeline for the inventory of cave resources is specified, and should the inventory not occur in a timely manner damage to potentially significant cave resources could occur in the interim.

Impacts Common to All Action Alternatives

Under all action alternatives, management direction instructs Monument staff to conduct an inventory of cave resources, including assessing the presence of or suitable conditions for *Pseudogymnoascus destructans*, which causes white-nose syndrome. Management direction also instructs staff to conduct pedestrian surveys for suspected high karst areas and implement appropriate management where these areas are identified. These pedestrian surveys could result in the discovery of caves associated with karst areas, resulting in protection of discovered cave resources.

Management direction instructs that staff promote cave research in accordance with the Monument science plan. Cave research would increase knowledge regarding cave resources, which likely would allow for a more accurate determination of whether a cave is significant under the Federal Cave Resources

Protection Act. Under all action alternatives, the Monument would manage all caves as significant until an evaluation of significance is completed. This would protect potentially significant features, characteristics, or values from damage or destruction until evaluation under the Federal Cave Resources Protection Act can be completed.

Under Alternatives B through D, all caves with suitable bat habitat in the Monument would require a permit for use, except traditional Tribal use. Compared with Alternative A, this would close caves to unrestricted use by visitors, preventing vandalism and accidental damage to cave resources. This would protect potentially significant cave resources until a survey for potential listing as a significant cave can be completed.

The additional direction for cave management under the action alternatives would result in increased protection of potentially significant cave resources, compared with Alternative A.

Cumulative Impacts

No planned or reasonably foreseeable future actions are expected to cumulatively contribute to the likelihood of caves being surveyed for potential listing as significant under the Federal Cave Resources Protection Act. Therefore, no incremental cumulative impacts are expected under any of the alternatives.

Issue 3: Would proposed management activities change the level of impacts on karst areas from development?

Summary of Analytical Methods

Alternatives that result in or allow infrastructure development in known karst areas could result in impacts on karst features.

Indicators

- The amount of proposed infrastructure development in karst areas that would result in direct physical impacts on karst formations or that would cause changes in drainage patterns, which would result in damage or dissolution of areas of karst formations.

Assumptions

- Placement of new roads, buildings, or other infrastructure in karst areas could impact karst formations or features by direct physical impacts or as a result of changes in drainage patterns, resulting in dissolution of soluble minerals in these areas.

Impacts Common to All Alternatives

No development of new roads, buildings, or other infrastructure that could impact karst formations or features, either by direct physical impacts or as a result of changes in drainage patterns, is proposed or anticipated to occur under any of the alternatives.

Cumulative Impacts

Karst areas include limestone formations, which exist in the Robledo Mountains, North Franklin Mountains, East Potrillo Mountains, and Bishop Cap Hills, and gypsum formations, which are in parts of the Robledo Mountains. The cumulative impacts area is the extent of these formations, some of which may extend beyond the Monument boundaries. Impacts can result from infrastructure development or

changes in land use. None of the actions proposed in the Monument plan or any planned or reasonably foreseeable future actions would occur in known karst areas; therefore, no contribution to cumulative impacts on karst areas is expected under any of the alternatives.

3.10 WATER RESOURCES

3.10.1 Key Points

- Under Alternative A, water resource management would continue to emphasize water rights and watershed management specifically related to water quality and sediment yields.
- Alternative B would administer the most protection for water resources by focusing on resource preservation and conservation. This alternative would meet and move toward riparian and upland land health standards to protect and restore watershed functionality and resiliency. The alternative would include mitigation of nonpoint source pollution impacts on receiving streams outside the Monument, improvements to soil characteristics to increase infiltration, reduction of runoff, and promotion of desired vegetation communities.
- Alternative C would create a goal of balancing the management and protection of water resources with resource uses, such as recreation, vehicle use, and livestock grazing. This alternative would provide intermediate protection for water resources with less protection than Alternative B but more than Alternative A.
- Alternative D would prioritize resource uses, such as recreation, vehicle use, and livestock grazing, while protecting water resources to maintain ecological function and to meet land capability.
- All action alternatives include more management actions that address the potential impacts on water resources and the proper care and management of relevant Monument objects and values compared to Alternative A. Impacts on water resources due to livestock grazing, special designations, and vegetation treatments would not differ substantially across the action alternatives. With the fewest restrictions on travel and recreation and the fewest designated areas, Alternative D would provide the least protection of water resources of all the action alternatives. With the most travel restrictions, Alternative B would provide the most protection of water resources.

3.10.2 Affected Environment

The Monument is in the Chihuahuan Desert, where evaporation rates typically exceed precipitation rates. Precipitation ranges from 8 to 17 inches per year, whereas actual evapotranspiration measurements from 2015 reached 64 inches within some areas of the Monument (Blake et al. 2020). With water demand from evapotranspiration exceeding water supply from precipitation, limited sources of surface water are found in the planning area. What surface waters exist are susceptible to both flooding and drought. Ephemeral pools (also known as playas), either in-channel or in the uplands, are often important features of the watershed. At higher elevations, temporary springs can occur during precipitation events. Variations in elevations and lithology typically define drainage types, overland flow rates, and erosion rates.

Water use is integral for public land management in the planning area. For example, livestock and wildlife rely on wells, artificial tanks, and springs. Recreation areas, such as the Aguirre Spring National Recreation Area and Dripping Springs Natural Area, are often far from municipal water lines and must use wells to access potable water. Riparian and upland vegetation, which are critical for watershed stability, wildlife

habitat, grazing, and recreation (for example, interpretive activities/programs, cultural plant gathering, or hiking), require dependable amounts of shallow groundwater and soil moisture (BLM 2022a).

Surface Water

The planning area consists of approximately 39 miles of intermittent streams, 2,440 miles of ephemeral drainages, 176 acres of waterbodies, and 12 springs and seeps (see **Figure 3-9**, Water Features in the Monument) (USGS GIS 2021; USGS GNIS GIS 2020). The planning area spans four distinct surface drainage basins (see **Figure 3-10**, Major (HUC 8) Watersheds in the Analysis Area); however, only one of these, El Paso-Las Cruces, has a through-flowing river, the Rio Grande. Within the El Paso-Las Cruces Basin, drainage basins channel storm runoff, snowmelt, and minor spring flow from both sides of the river toward the Rio Grande. The other three basins—the Jornada Draw, Tularosa, and Mimbres—are closed basins. The primary water features in these closed basins are ephemeral drainages, which include ephemeral streams, arroyos, and desert washes. These surface water features function as areas of overland flow, collection, and recharge areas for the surrounding watershed.

Surface waterbodies supply approximately 60 percent of the water currently diverted in the planning area. Water diversions are mainly used for irrigated agriculture (LRGRWP 2017). The dominant waterway flowing in the region is the Rio Grande.

Surface water quality in the Monument is evaluated through a comparison of periodic monitoring and pertinent water quality standards. There are no US Environmental Protection Agency (EPA) 303(d)-listed waterbodies within the Monument. However, several reaches of the Rio Grande outside the Monument boundaries have been listed on the 2020–2022 New Mexico 303(d) list (NMED 2021) due to exceedance of New Mexico’s *Escherichia coli* (*E. coli*) criteria. Besides the Rio Grande, no perennial streams in surface water drainage basins span the planning area, so no other streams are listed as impaired.

Streamflows in major rivers across the Southwest are projected to decrease substantially during this century due to a combination of diminished cold season snowpack and higher evapotranspiration in the warm season (Christensen et al. 2004; Hurd and Coonrod 2008; USBR 2011, 2013). The seasonal distribution of streamflow is projected to change as well: flows could be somewhat higher in late winter, with diminished peak runoff occurring earlier in the spring. Late spring/early summer flows are projected to be much lower than at present given the combined effects of less snow, earlier melting, and higher evaporation rates after snowmelt (LRGRWP 2017).

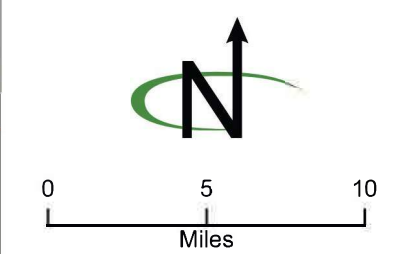
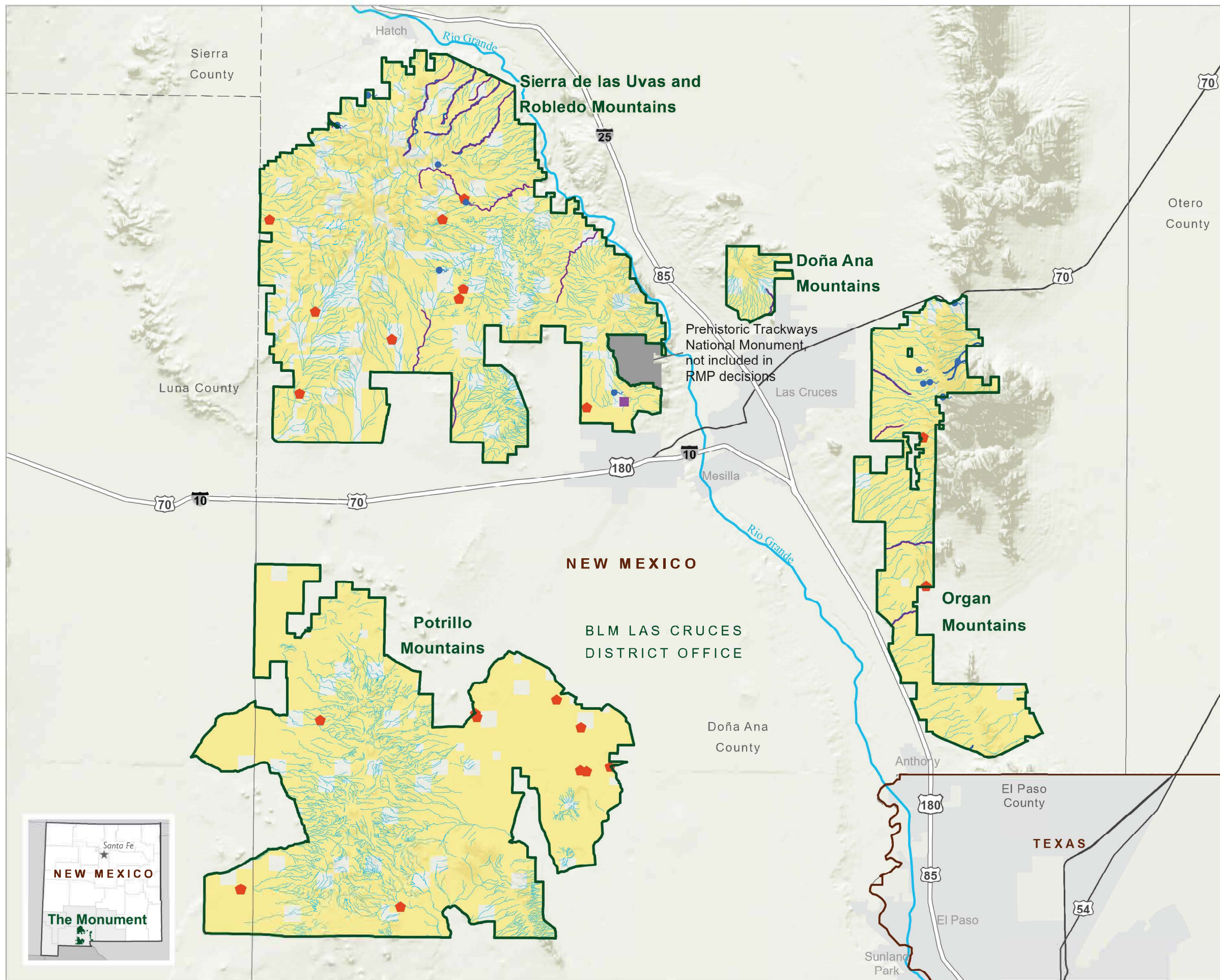
Groundwater

Groundwater resources for the planning area include portions of six underground water basins (see **Figure 3-11**, Underground Water Basins in the Analysis Area): the Lower Rio Grande, Tularosa (western portion), Nutt-Hockett (eastern portion), Hueco, Mount Riley, and Mimbres (eastern portion). The Lower Rio Grande underground water basin is separated into two sub-basins: the Rincon Valley and Mesilla. In the region, groundwater resources are used for agriculture, irrigation, municipal and industrial water use, and domestic wells.



**Figure 3-9
Water Features in the Planning Area**

- Spring or seep
- Water intake or outflow
- Well
- Arroyo
- Intermittent stream or river
- Ephemeral stream or river
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 April 18, 2023, OrganMtnsRMP_AE_resources_hydro_SpringsStreams.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.
 Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

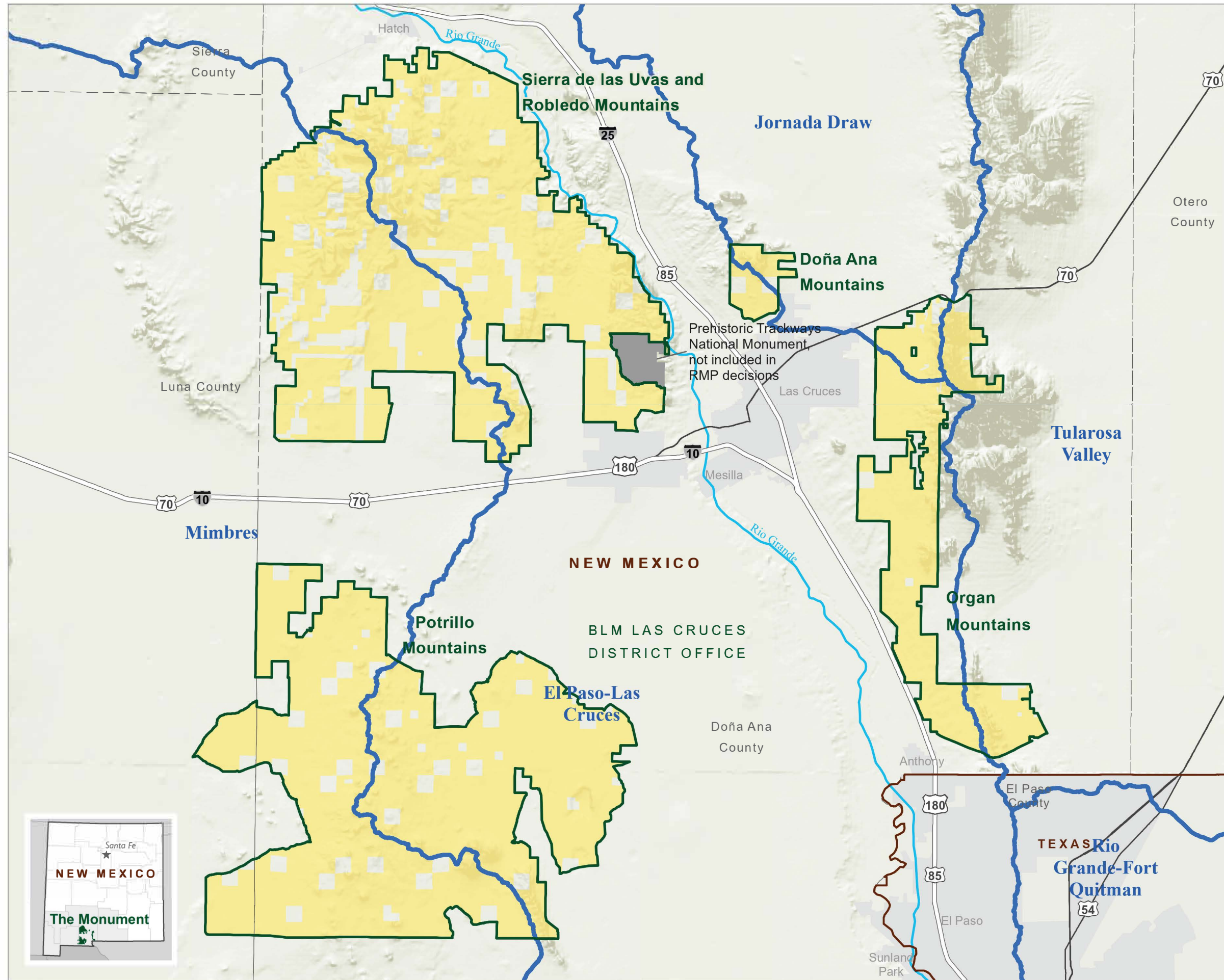



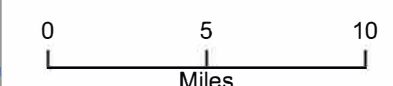


Figure 3-10
Major (HUC 8) Watersheds in the Analysis Area

-  Hydrologic unit code 8
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 April 18, 2023, OrganMtnsRMP_AE_resources_hydro_HUC8.mxd
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Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

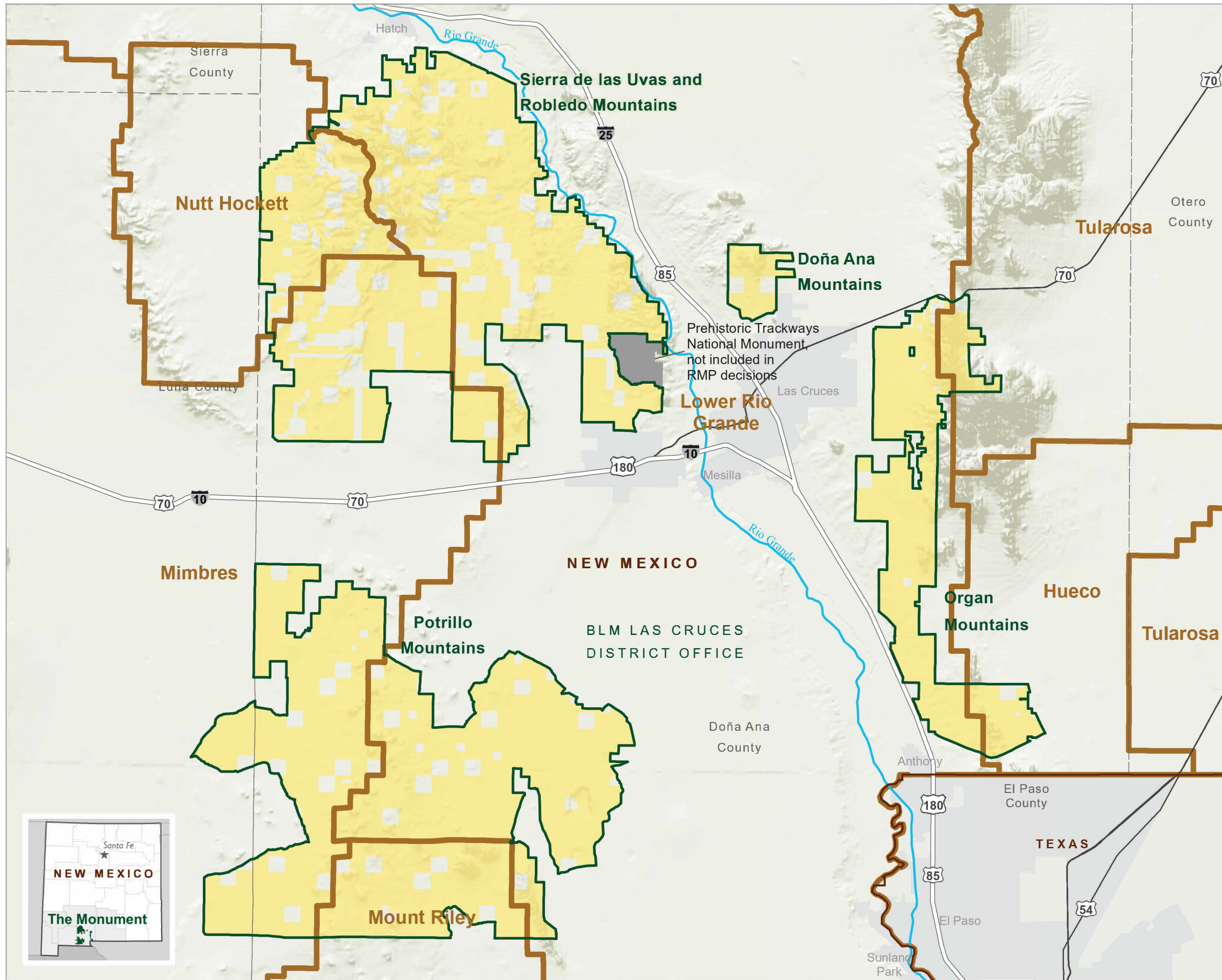
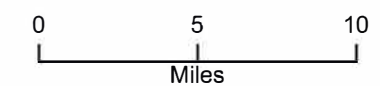


Figure 3-11
Underground Water Basins in the
Analysis Area

- Declared underground water basin
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 April 18, 2023, OrganMtnsRMP_AE_resources_hydro_Groundwater.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

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The New Mexico Office of the State Engineer is responsible for assuring that groundwater resources are protected for beneficial use by all those with water use rights. The State of New Mexico retains all waters not in use. The Office of the State Engineer has divided the state into declared groundwater basins in order to assess and adjudicate water resources (see **Figure 3-11**, Underground Water Basins in the Analysis Area).

The chemical water quality of aquifers in New Mexico's underground water basins has generally improved over the last 10 years due to regulatory efforts, cultural awareness, and rapid response to groundwater problems (NMED 2021). Within the planning area, groundwater quality issues are impacted from leaking underground storage tanks, contaminant plumes, and unlined landfills. These issues are promptly detected and remediated under a host of private and public programs. Nonpoint source pollution, such as increased nitrate concentrations from agricultural chemicals and septic systems, remains a concern. However, strong control programs have caused a decrease in nonpoint source pollution within the planning area (King 2004; NMED 2021). Other groundwater quality concerns in the planning area include arsenic, lead, nickel, selenium, and uranium in shallow aquifer systems and salinity in deep groundwater (South Central Mountain RC&D Council 2002; LRGRWP 2017).

In the Rincon Valley and Mesilla sub-basins, groundwater is hydrologically connected to surface water. Seepage from the Rio Grande and irrigation return flows recharge the aquifer, and groundwater pumping can deplete surface flows. Thus, water levels in wells near the Rio Grande fluctuate with the irrigation rates and streamflow. Wells currently show a decline from recent droughts and increased pumping. In the other basins that are not stream-connected, groundwater is slowly replenished through recharge from intermittent flows in arroyos and mountain-front recharge.

The slower recharge rates in deep groundwater aquifers are usually isolated from short-term drought. These deeper aquifers are more strongly tied to pumping rates in large municipal, agricultural, and industrial areas. In general, groundwater levels in smaller, deeper aquifers are declining. Conversely, shallow aquifers and soil moisture are highly dependent on direct recharge and precipitation. Hence, water quantity is declining in both deep and shallow groundwater over the planning area.

The springs on the eastern side of the Organ Mountains unit are intermittent. Surface water flow is a direct response to precipitation events propagating through fractured rock systems. While highly dependent on the quantity of precipitation, these springs may flow for only a day or several months. Generally, flows have decreased due to prolonged drought and decreasing water tables (Blake et al. 2020). Water quality at each of these springs is currently unknown.

Additional information is available in Sections 2.1.10 and 3.9, Water Resources, of the AMS (BLM 2022a).

3.10.3 Environmental Consequences

The analysis area for water resources includes all surface water and groundwater resources within the planning area. The location of selected water resources was overlaid with the location of current and proposed BLM management activities to compare alternatives; however, due to the limited data available, the selected water resources may not account for the full range of impacts on water resources that could occur.

No perennial streams, 303(d) listed streams, or source water protection areas are included in this analysis; this is because none are in the Monument.

Issue 1: How would management of livestock grazing under the alternatives impact water quality, streambanks, and floodplains?

Summary of Analytical Methods

This analysis uses GIS acreage calculations for the occurrence of each indicator on areas of BLM-administered lands intersected with potential BLM management activities under each alternative. The acres or stream miles were used as a comparison tool to estimate the magnitude of potential impacts that may occur for each indicator. When acres or miles could not be determined, a qualitative approach was used.

Indicators

- Miles of intermittent streams and ephemeral drainages in areas available to livestock grazing
- Acres of waterbodies in areas available to livestock grazing
- Number of seeps and springs in areas available to livestock grazing
- Number of groundwater wells in areas available to livestock grazing

Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impacts Common to All Alternatives

Under all alternatives, livestock management would aim for sustainable grazing that maximizes traditional practices and contributes to the local economy while providing for functional rangeland ecosystems and protecting, preserving, and enhancing Monument resources, objects, and values.

Livestock management can have direct and indirect impacts on water resources. Livestock can directly degrade water quality by adding chemical wastes (such as nitrogen or phosphorus) and biological pathogens to surface water resources when they urinate or defecate in or near the waterbodies. They indirectly degrade water quality by compacting and eroding soils, destabilizing streambanks, and altering floodplains. Livestock grazing and the construction of livestock infrastructure can disturb the soil surface, increasing soil compaction and erosion. Soil compaction decreases infiltration rates and increases overland flow, encouraging the transport of pollutants and eroded sediment to surface water resources. This impairs the water quality due to increased contamination and turbidity.

Water resources could be further impacted as drainage patterns (that is, channelized and overland flow patterns) and floodplains are changed from destabilized streambanks due to surface disturbance and vegetation loss. As drainage patterns change, runoff critical to recharging streams, springs, associated riparian habitats, and locally important aquifers is redirected. As a result, sensitive areas can be dewatered; this compromises vegetation health while also degrading the proper function and condition of the watershed (Agouridis et al. 2005; Hubbard et al. 2004).

AMPs can provide protections by minimizing surface disturbance and resolving issues related to water resources. Under all alternatives, AMPs will continue to be developed for grazing allotments to resolve

resource problems or conflicts. Each AMP will be coordinated between permittees, other landowners, and affected interests, and each will normally include a grazing system to provide periodic rest from livestock grazing. Additionally, allotments within special management areas or riparian zones will receive a higher priority for AMP development due to possible resource conflicts (see **Section 2.4.1, Table 2-2, Goals, Objectives, and Management Direction Common to All Alternatives, Livestock Grazing**).

Riparian ecosystems provide a buffer for surface water against sediment and contaminants. These buffers could provide protection to water resources by minimizing surface disturbance, vegetation loss, and water quality degradation. This would be particularly important for areas with less-than-desirable riparian and watershed conditions, areas with known issues and concerns, or areas in danger of losing potential site productivity or not meeting New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2000).

Mitigation measures in the form of structural controls (such as riparian buffers and installing watering troughs) could modify the transport of the pollutants to water resources. Cultural controls (such as managed grazing) would minimize pollutant inputs to streams through land management practices. These mitigation measures, cultural controls, and best management practices would reduce the long-term and cumulative impacts on water quality.

Alternative A (No Action Alternative)

Water resource impacts from livestock grazing are summarized by alternative in **Table 3-39**. Under Alternative A, there would be no change from current management; livestock grazing would continue on 490,545 acres of active allotments. Water resources in areas available to livestock grazing include 2,034 miles of intermittent streams and ephemeral drainages, 95 acres of National Hydrography Dataset waterbodies, 8 springs, and 9 groundwater wells. The impacts on water resources would be the same as those described under *Impacts Common to All Alternatives*. AMPs and range improvement development would provide some protection to water resources by prioritizing allotments that overlap special designation areas and riparian areas.

**Table 3-39
Water Resources in Areas Available to Livestock Grazing by Alternative**

Water Resource	Same Across All Alternatives
Intermittent streams and ephemeral drainages (miles)	2,034
Waterbodies (acres)	95
Springs	8
Groundwater wells	9

Sources: BLM GIS 2022; USGS GIS 2021; USGS GNIS GIS 2020

Action Alternatives (Alternatives B through D)

Under all action alternatives, the total acres of active allotments would be the same as under Alternative A (490,545 acres). Compared with Alternative A, all action alternatives could result in reduced adverse impacts on water resources; this is because they include more livestock management actions to protect watersheds and riparian systems and to minimize surface disturbance and water quality degradation. Under all action alternatives, 4,529 acres would be unavailable for standard term livestock grazing leases; this is

the same as under Alternative A. Impacts on water resources would be reduced locally in these closed areas. Making areas unavailable for grazing could provide long-term protection of soil and water resources; this is because it would limit the loss of vegetation cover and the disturbance of sensitive soils by livestock.

Allowable use and management direction of the types of livestock would vary under the action alternatives. Under Alternatives B and C, the BLM would prohibit grazing of domestic sheep and goats in the Monument (496,591 acres). Under Alternative D, the grazing of domestic sheep and goats would be prohibited in currently occupied or potential bighorn sheep habitat areas designated by NMDGF (21,106 acres). Restricting certain areas so they would not include sheep and goats could result in increased trampling by heavier grazing animals, such as cattle. As a result, prohibiting domestic sheep and goats could increase impacts on water resources through increased soil compaction and soil erosion from increased trampling, when compared with Alternative A.

Similar to under Alternative A, under the action alternatives, AMPs and range improvement development would prioritize allotments that overlap special designations areas, riparian areas, areas with springs and seeps, and soils on slopes over 10 percent. Increased management efforts to reduce or exclude these sensitive areas from surface disturbance from livestock grazing could decrease water resource impacts, compared with Alternative A.

The impacts on water resources would not differ substantially across the action alternatives. All action alternatives would afford increased protection of water resources, compared with Alternative A, due to more management actions to mitigate the negative effects of grazing, to protect watersheds and riparian systems, to minimize surface disturbance and water quality degradation, and to allow progression toward desired conditions.

Cumulative Impacts

The analysis area for cumulative impacts on water resources is BLM-administered lands in the planning area as well as 8-digit hydrologic unit code (HUC) watersheds that capture all waterbodies flowing into and out of the planning area. Planned projects in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on water resources. These projects consist of rehabilitating existing roads, improving overall accessibility, maintaining trails, and maintaining existing infrastructure related to livestock grazing. For example, in the Dripping Springs Natural Area, the BLM plans to replace the cattle guards in fiscal year 2025. This would cumulatively decrease the potential for livestock escapes and reduce impacts on water resources under all alternatives.

The reasonably foreseeable future projects in the planning area could increase erosion during and after construction, degrade surrounding vegetation, and disturb soil, which can impact water resources through erosion and sedimentation. However, because best management practices would be used before, during, and after construction, impacts on water resources would be short term. Additionally, because these projects largely consist of improvements to existing infrastructure, impacts would be confined to the road corridor or existing footprint and could improve watershed conditions in the long term.

Issue 2: How would management of recreation, transportation, and access under the alternatives impact water quality, floodplains, and natural drainage patterns?

Summary of Analytical Methods

This analysis uses GIS acreage calculations for the occurrence of each indicator on areas of BLM-administered lands intersected with potential BLM management activities under each alternative.

Indicators

- Miles of intermittent streams and ephemeral drainages in areas open to OHV travel and within SRMAs
- Acres of waterbodies in areas open to OHV travel and within SRMAs
- Number of seeps and springs in areas open to OHV travel and within SRMAs
- Number of groundwater wells in areas open to OHV travel and within SRMAs

Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impacts Common to All Alternatives

Under all alternatives, management would aim to maintain or enhance travel, access, recreation, and visitor services in a manner that is compatible with the protection of the Monument's resources, objects, and values. Travel, access, and recreation management would strive to achieve a balance where the public can access public land and quality outdoor recreation opportunities while having minimal detrimental impacts on natural resources.

Increased recreation, travel, and access can directly and indirectly degrade water resources through surface-disturbing activities, such as clearing soil and vegetation for roads, development, and other travel or recreational infrastructure. Surface disturbances could also occur from construction of recreational facilities, increased OHV travel, and excessive dispersed camping. Travel across the land, including OHV travel, mountain biking, hiking, and horseback riding, results in vegetation loss and soil compaction. The loss of vegetation and soil compaction can lead to soil erosion and increase sediment flow into waterways. Motorized vehicle traffic increases the likelihood of chemical spills, such as oil, grease, and antifreeze, which could contaminate surface waters through runoff (Nixon and Saphores 2007). Improper OHV use may degrade existing and future erosion-control features, stock tanks, and other management efforts implemented to protect water resources. This could not only increase erosion, vegetation loss, and soil compaction but also alter channelized and overland flow patterns and function.

Potential impacts from transportation and access management decisions are likely to be minimal and concentrated to specific areas. The potential impacts can be mitigated through best management practices. For example, management approaches that designate travel to specified routes can result in more predictable, localized, and manageable impacts. Selectively locating travel routes away from areas where water resources exist can minimize the extent of the effects.

Most recreation on BLM-administered lands is dispersed or developed recreation (see **Section 3.16.2, Recreation, Affected Environment**). Recreational use of these types results in minor amounts of vegetation loss, soil compaction, and soil erosion; these could directly and indirectly impact water resources by increasing sediment load and chemical contamination. Recreation opportunities in all Monument units are similar; however, some areas are more heavily used due to specific landmarks. Some SRMAs could see increased impacts on water resources by promoting increased equestrian and pedestrian use. Management approaches that direct recreation to specific areas and avoid dispersed recreation could result in more concentrated, but more predictable, localized and manageable impacts.

SRMAs could decrease surface disturbance and water quality degradation through management practices such as closing areas to OHV travel, closing or limiting nonmotorized travel to designated roads and trails, closing areas to certain uses (recreational shooting, dogs and pets, and dispersed camping), increasing ROW exclusion areas, and managing for Visual Resource Management (VRM) Class II.

The management of travel, access, and recreation can protect and improve water resources by placing restrictions on motorized and mechanized vehicles, limiting dispersed camping, and directing recreation to specific areas. These limitations and restrictions could directly and indirectly protect water resources by decreasing potential chemical, biological, and turbidity contamination.

Alternative A (No Action Alternative)

Table 3-40 summarizes the water resources in designated travel areas and SRMAs by alternative. Under Alternative A, there would be no change to the potential for impacts on water resources resulting from travel, access, and recreation. The impacts on water resources would be the same as those described under *Impacts Common to All Alternatives*. Travel and access areas would remain the same as under current management, with 49 percent of the Monument closed to motorized OHV travel (242,889 acres) and 51 percent limited to designated roads (253,702 acres). Recreation management would continue with 12 percent of the Monument in SRMAs (59,524 acres).

Under Alternative A, efforts to control erosion would continue and include the following: minimizing surface disturbance from road construction projects, closing and rehabilitating unneeded roads, and controlling off-road vehicle use in critical areas.

**Table 3-40
Water Resources in Designated Travel Areas and SRMAs by Alternative**

Water Resource	Closed to Motorized OHV Travel	Limited to Designated Routes	SRMAs
Alternative A			
Intermittent streams and ephemeral drainages (miles)	1,034	1,032	229
Waterbodies (acres)	17	78	12
Springs	7	1	4
Groundwater wells	6	3	2

Water Resource	Closed to Motorized OHV Travel	Limited to Designated Routes	SRMAs
Alternative B			
Intermittent streams and ephemeral drainages (miles)	1,139	927	258
Waterbodies (acres)	25	71	20
Springs	7	1	5
Groundwater wells	6	3	2
Alternative C			
Intermittent streams and ephemeral drainages (miles)	1,082	984	182
Waterbodies (acres)	20	76	17
Springs	7	1	1
Groundwater wells	6	3	1
Alternative D			
Intermittent streams and ephemeral drainages (miles)	1,015	1,051	45
Waterbodies (acres)	17	79	1
Springs	6	2	0
Groundwater wells	6	3	0

Sources: BLM GIS 2022; USGS GIS 2021; USGS GNIS GIS 2020

Action Alternatives (Alternatives B through D)

Under Alternative B, travel and access management would provide greater protection to water resources; this is because areas closed to motorized OHV travel (269,697 acres) would increase, and SRMAs would increase (66,348 acres) compared with under Alternative A. Compared with Alternative A, Alternative B would include an additional 105 additional miles of intermittent and ephemeral streams and 8 additional acres of National Hydrography Dataset waterbodies in areas closed to motorized OHV travel. SRMAs would increase to 13 percent of the Monument and include an additional 29 miles of intermittent and ephemeral streams, 8 acres of National Hydrography Dataset waterbodies, and 1 spring. These increases in protected water resources would reduce the potential impacts from travel, access, and recreation under Alternative B, compared with under Alternative A.

Under Alternative C, travel and access management would increase areas closed to motorized OHV travel (255,870 acres), compared with Alternative A. Areas closed would include an additional 48 miles of intermittent and ephemeral streams and 3 additional acres of National Hydrography Dataset waterbodies in areas closed to motorized OHV travel. SRMAs would decrease from 12 percent of the Monument under Alternative A to 10 percent of the Monument (45,871 acres) under Alternative C. However, these SRMAs would overlap other designated areas that would continue to receive special management to protect water resources and other resources of interest (see **Section 3.16**, Recreation, for additional information). Potential impacts from travel and access would be reduced due to the changes in protected water resources under Alternative C compared with under Alternative A. Impacts on water resources from recreation would be similar to those under Alternative A.

Under Alternative D, travel and access management would decrease areas closed to motorized OHV travel, compared with Alternative A. Under Alternative D, 239,596 acres would be closed to motorized OHV travel. Compared with Alternative A, areas not closed to motorized OHV travel would include an

additional 19 miles of intermittent and ephemeral streams. Compared with Alternative A, SRMAs would decrease from 12 percent of the Monument to 1 percent of the Monument (7,284 acres). However, these SRMAs would overlap other designated areas that would continue to receive special management to protect water resources and other resources of interest. Potential impacts from travel and access would increase due to the changes in protected water resources under Alternative D, compared with under Alternative A. Impacts on water resources from recreation would be similar to those under Alternative A.

Overall, management prescriptions for travel, access, and recreation under Alternative B would afford the most protection of water resources when compared with Alternative A; this is due to Alternative B having the most restrictions in terms of areas closed to motorized OHV travel.

Cumulative Impacts

The analysis area for cumulative impacts on water resources is BLM-administered lands in the planning area as well as 8-digit HUC watersheds that capture all waterbodies flowing into and out of the planning area. Planned projects in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on water resources. These projects consist of rehabilitating existing roads, improving overall accessibility, maintaining trails, and maintaining existing infrastructure. Continuation of trends of increased visitation would increase the potential for illegal OHV use, user-created trails, and successive surface disturbance under all alternatives. This cumulative impact on water resources would be greatest under Alternatives A and D because they would have the most areas managed as limited to designated routes.

Issue 3: How would special designations under the alternatives protect water resources from management activities?

Summary of Analytical Methods

Indicators

- Miles of intermittent streams and ephemeral drainages in areas with special designations
- Acres of waterbodies in areas with special designations
- Number of seeps and springs in areas with special designations
- Number of groundwater wells in areas with special designations

Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impacts Common to All Alternatives

Management prescriptions for designated areas such as wilderness, national historic trails, NNLs, ACECs, and RNAs could have both beneficial and adverse impacts on water resources. For example, designated areas could potentially limit management activities and recreation use; thus, they could indirectly protect

water resources by preventing soil surface disturbance, vegetation loss, and changes to channelized and overland flow patterns. On the other hand, management prescriptions for designated areas could direct recreation and travel to specific areas and landmarks, which could increase and concentrate water resources impacts in these specific areas.

Under all alternatives, management prescriptions for designated areas would aim to protect the resources that meet the relevant and important values (biological, scenic, cultural, paleontological, species status species, and riparian areas). Water resources within designated areas by alternative are shown below in **Table 3-4I**.

Table 3-4I
Water Resources in Areas with Special Designations by Alternative

Water Resource	Wilderness	National Historic Trail	National Historic Landmark	ACECs
Alternative A				
Intermittent streams and ephemeral drainages (miles)	1,015	19	14	237
Waterbodies (acres)	17	3	0	16
Springs	6	0	0	5
Groundwater wells	6	0	0	1
Alternative B				
Intermittent streams and ephemeral drainages (miles)	1,015	19	14	298
Waterbodies (acres)	17	3	0	18
Springs	6	0	0	6
Groundwater wells	6	0	0	1
Alternative C				
Intermittent streams and ephemeral drainages (miles)	1,015	19	14	130
Waterbodies (acres)	17	3	0	14
Springs	6	0	0	1
Groundwater wells	6	0	0	1
Alternative D				
Intermittent streams and ephemeral drainages (miles)	1,015	19	14	0
Waterbodies (acres)	17	3	0	0
Springs	6	0	0	0
Groundwater wells	6	0	0	0

Sources: BLM GIS 2022; USGS GIS 2021; USGS GNIS GIS 2020

Under all alternatives, management prescriptions for designated wilderness would be the same. Management prescriptions for wilderness would close areas to motorized and mechanized travel and establish wilderness guidance for recreation, such as camping a minimum distance from surface water. Decreased transportation access and limited recreation in designated wilderness would protect 1,015 miles of intermittent streams and ephemeral drainages, 17 acres of National Hydrography Dataset

waterbodies, 6 springs, and 6 groundwater wells by minimizing ground disturbance, erosion, and sedimentation.

Alternative A (No Action Alternative)

Under Alternative A, the BLM would continue to manage 239,596 acres of the Monument as designated wilderness, 64,073 acres as ACECs, and 3,736 acres as the Aden Lava Flow RNA. The BLM would continue to manage the Butterfield Overland NHT as a national historical trail, and Kilbourne Hole would remain designated as a NNL. Under Alternative A, surface-disturbing activities would not be allowed within one-fourth mile on either side of the Butterfield Overland NHT, and OHV travel would be limited to designated roads and trails in Kilbourne Hole NNL. Restricting surface-disturbing activities in these designated areas would protect water resources by reducing potential water quality degradation from sedimentation and erosion due to soil surface disturbance and vegetation loss.

Action Alternatives (Alternatives B through D)

Compared with Alternative A, the acres of ACECs would increase under Alternative B and decrease under Alternatives C and D. Despite the difference in ACEC acreage, protections afforded to water resources would not differ substantially across alternatives and compared with Alternative A. These protections on allowable uses would be similar regardless of the total ACEC acreage due to protections from Proclamation 9131 and management of designated wilderness areas (see **Section 3.19**, Special Designations, for additional information). The exception to these protections would be in portions of the ACECs that close areas to OHV use, specifically the Doña Ana Mountains ACEC under Alternative B. Water resources would be more protected in these areas under Alternative B, when compared with Alternative A and the other alternatives.

Under all action alternatives, the Aden Lava Flow RNA (3,736 acres) would be undesignated. However, the RNA is entirely within designated wilderness. Potential surface disturbance and water quality degradation would be reduced because of travel restrictions within the designated wilderness; this is similar to Alternative A.

Under Alternative B, surface-disturbing activities would not be allowed within 1 mile on either side of the Butterfield Overland NHT. In addition, Kilbourne Hole NNL would be closed to OHV travel. These restrictions would increase protections for water resources compared with Alternative A. Under Alternatives C and D, surface-disturbing activities would not be allowed within one-half mile and one-fourth mile, respectively, on either side of the Butterfield Overland NHT. These restrictions would increase protections for water resources compared with Alternative A but to a lesser extent than Alternative B. Also, OHV travel would be limited to designated roads and trails (same as Alternative A) in Kilbourne Hole NNL, where impacts would be the same as under Alternative A.

Management prescriptions for designated areas under Alternative B would afford the most protection of water resources when compared with Alternative A through additional OHV restrictions and additional management directions to reduce surface disturbance within the Butterfield Overland NHT and Kilbourne Hole NNL.

Cumulative Impacts

The analysis area for cumulative impacts on water resources is BLM-administered lands in the planning area as well as 8-digit HUC watersheds that capture all waterbodies flowing into and out of the planning

area. Planned projects in the Dripping Springs Natural Area, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Sierra Vista Trailhead area would add to the overall impacts on water resources. These projects consist of rehabilitating existing roads, improving overall accessibility, maintaining trails, and maintaining existing infrastructure.

The reasonably foreseeable future projects in the planning area could increase erosion during and after construction, degrade surrounding vegetation, and disturb soil, which can impact water resources through erosion and sedimentation. However, because best management practices would be used before, during, and after construction, impacts on water resources would be short term. Additionally, because these projects largely consist of improvements to existing infrastructure, impacts would be confined to the road corridor or existing footprint and could improve watershed conditions in the long term.

Issue 4: How would vegetation management, active fuels treatments, and reducing wildfire risk impact water quality, floodplains, and natural drainage patterns?

Summary of Analytical Methods

Indicators

- Changes in vegetation management and fuels treatments that could influence water quality, floodplains, and the natural drainage pattern.

Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impacts Common to All Alternatives

Vegetation management includes any management decisions that are associated with vegetation manipulation: fire management, vegetation communities, riparian resources, and noxious weed management. Under all alternatives, vegetation management would aim to enhance the natural watershed function, stabilize soils, minimize erosion, manage riparian habitats, and maintain properly functioning seeps and springs.

Vegetation management resource decisions could have short-term, adverse impacts on soil and water resources immediately after vegetation treatments. Exposed and disturbed soils from active treatments could be more susceptible to erosion immediately after the vegetation treatment occurs. Reduced vegetation cover and surface disturbance could increase sedimentation and turbidity; they also could change natural drainage patterns of channelized and overland flow, resulting in degraded water quality.

On the other hand, beneficial long-term impacts could occur when vegetation and fuels management projects include treatments that protect soils from erosion and improve soil temperature and moisture. These treatments could create conditions favorable to establishing and sustaining desirable vegetation communities. These projects could enhance vegetation ground cover and reduce the risk of wildfires and landslides, which could reduce soil erosion and decrease water quality degradation.

Alternative A (No Action Alternative)

Under Alternative A, vegetation management objectives could decrease adverse impacts on water resources by emphasizing water rights and watershed management specifically related to water quality and sediment yields. Vegetation management would evaluate activities in fragile land areas. A watershed management plan would be developed for the Uvas Valley, which could reduce surface disturbances and decrease water resource degradation in this area.

Action Alternatives (Alternatives B through D)

Compared with Alternative A, all action alternatives would result in less potential adverse impacts on water resources because they include more vegetation management actions. Vegetation management actions include protecting and restoring watersheds, reducing nonpoint source pollution through enhanced soil stability, increasing soil moisture, decreasing erosion, stabilizing hydrologic functions, and restoring desired vegetation communities. Vegetation objectives and management directives would aim to increase land health assessments and monitoring to ensure the protection of sensitive habitats and resources. These objectives and directives would result in long-term benefits to watershed conditions and function more than under Alternative A (see **Section 2.4.1, Table 2-2, Goals, Objectives, and Management Direction Common to All Alternatives, Vegetation Communities**).

Under all action alternatives, management objectives and direction that could reduce surface disturbances and decrease water resource degradation include the following:

- Meet or progress riparian and upland land health standards to protect and restore watershed functionality and resiliency. Mitigate nonpoint source pollution impacts on receiving streams outside the Monument. Improve soil characteristics to increase infiltration, reduce runoff, and promote desired vegetation communities.
- Stabilize soils by minimizing surface disturbance and maintaining the appropriate percentage of vegetation cover, protective litter, and rock cover.
- Evaluate land health at the watershed level, using ecological site descriptions; Interpreting Indicators of Rangeland Health; long-term monitoring data; and AIM data. Establish benchmarks so that land health standards can be evaluated using available data in addition to Interpreting Indicators of Rangeland Health.
- Initiate, support, and participate in watershed-level planning and future studies. This could include writing comprehensive watershed management plans based on both the watershed boundary and drainage basin boundary. In addition, the plans could provide a framework to protect, enhance, and restore watershed health that promotes and mimics the natural hydrological processes within the watershed.
- Conduct vegetation treatments to increase infiltration and address hydrologic function and biotic integrity based on the vegetation type, soil type, and landform. Prioritize areas identified as at risk of ecological state transition based on land health assessments.

Cumulative Impacts

The analysis area for cumulative impacts on water resources is BLM-administered lands in the planning area as well as 8-digit HUC watersheds that capture all waterbodies flowing into and out of the planning area.

One of the major issues affecting water resources, watershed condition, and downstream water quality is the departure of vegetation communities from their historical fire regimes and the increased risk for uncharacteristic wildfire. Alternatives B, C, and D include plan components to move vegetation communities toward desired conditions, including objectives for mechanical treatment, prescribed burning, and restoration objectives to improve priority watersheds in the Monument. These actions would improve fire regimes and decrease the risk of uncharacteristic wildfires, reducing the cumulative impacts on water resources and water quality downstream, including changes to stream morphology and sedimentation.

3.11 AIR QUALITY

3.11.1 Key Points

- Under all alternatives, more than 99 percent of the particulate matter emissions would come from transportation and travel management. Recreation in the planning area is expected to increase under all alternatives, resulting in increased travel and associated particulate matter emissions.
- With more areas closed to surface use under the action alternatives, surface-disturbing activities would be concentrated in the remaining open areas, potentially resulting in a localized increase in particulate matter emissions.
- There would be a potential positive impact on particulate matter emissions from implementing prescribed fire; the reduction in uncontrolled wildfires would offset emissions from prescribed fires to a degree that would reduce the overall emissions from wildland fires.
- Overall, activities in the Monument are not a substantial source of criteria pollutant and hazardous pollutant emissions. This is because of the limitations on emission-generating sources resulting from Monument and wilderness designations.

3.11.2 Affected Environment

Under the Clean Air Act (42 USC 7401 et seq.), the EPA sets National Ambient Air Quality Standards (NAAQS) defining levels necessary to protect public health (primary standards) and levels necessary to protect public welfare (secondary standards) for six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (fine particulate matter 2.5 micrometers or smaller [PM_{2.5}] and large particulate matter less than 10 micrometers [PM₁₀]), and sulfur dioxide. The New Mexico Air Quality Control Act sets additional ambient air quality standards applicable to all areas of New Mexico, except Bernalillo County and Tribal lands.

The New Mexico Environment Department operates air quality monitoring stations across the state where it collects data on the concentration of air pollutants. Data collected from stations in Doña Ana and Luna Counties on nitrogen dioxide, ozone, PM_{2.5}, and PM_{2.5} near the planning area (there are no monitors in the Monument) are shown in **Table 3-42** (Beardsley et al. 2022, Table 2-5 and Figure 2-2, pp. 8-9). Lead is not monitored anywhere in the state, and carbon monoxide and sulfur dioxide are not monitored anywhere in Doña Ana or Luna Counties.

Overall, air quality is relatively good in both counties as indicated by the trend in air quality index. The air quality index is reported daily according to a 500-point scale for each of the major criteria air pollutants.

Table 3-42
Concentration of Criteria Air Pollutants (2020-2022)

Pollutant	Averaging Period	NAAQS	NMAAQS	Average Pollutant Concentrations*
Nitrogen Dioxide (ppb) ¹	Annual	53	50	8
	1-hour	100	100	48
Ozone (ppb) ²	8-hour	70	—	81
PM _{2.5} (µg/m ³) ³	Annual (Primary)	12	—	8.9
	Annual (Secondary)	15	—	
	24-hour	35	—	22
PM ₁₀ (µg/m ³) ⁴	24-hour	150	—	Doña Ana County – 5.1 Luna County – 4.4

Source: EPA 2023a; Beardsley et al. 2022

— = NMAAQS does not exist

ppm = parts per million; ppb = parts per billion; µg/m³ = microgram per cubic meter

* The values are from Doña Ana County, except where it is noted otherwise.

¹ The design value is the annual average of the hourly concentration values. The design value listed for each county is the highest among monitors with valid design values.

² The design value is the 3-year average of the annual fourth-highest daily maximum 8-hour ozone concentration. The design value listed for each county is the highest among sites with valid design values.

³ The design value is the annual mean concentration, averaged over 3 consecutive years. The design value listed for each county is the highest among monitors with valid design values.

⁴ The NAAQS metric is the annual estimated number of exceedances, averaged over three consecutive years. The average estimated exceedances value listed for each county is the highest among monitors with complete data.

From 2012 to 2020, the median air quality index⁶ for Doña Ana County was relatively stable. It ranged from 50 to 57, indicating that air quality in the county was good to moderate. The median air quality index for Luna County ranged from 12 to 46 during the same period and was less than 20 in all years since 2015, indicating air quality was good (Beardsley et al. 2022, pp. 9; EPA 2021).

Luna County is in attainment of both the NAAQS and New Mexico Ambient Air Quality Standards for all pollutants. Doña Ana County is in attainment for the NAAQS and New Mexico Ambient Air Quality Standards, except for two areas along the southern county border, outside the Monument. These areas are nonattainment for PM₁₀ (primarily due to high winds that result in blowing dust) and for ozone (primarily due to international emissions from Mexico).

The EPA, in collaboration with state, local, and Tribal agencies, compiles a National Emissions Inventory every 3 years. **Table 3-43** shows the first-released EPA 2020 National Emissions Inventory data for Doña Ana and Luna Counties. In both counties, on-road vehicles are the largest source of carbon monoxide and nitrogen dioxide, while area sources, which represent a combination of stationary nonpoint sources, are the largest contributors of PM₁₀ and PM_{2.5}. Biogenic sources,⁷ followed by area sources, dominate volatile organic compound⁸ emissions in both counties (EPA 2023b).

⁶ The median air quality index was based on available data from nine active monitors in Doña Ana County that measured PM_{2.5}, PM₁₀, ozone, and nitrogen dioxide and one active monitor in Luna County that measured PM₁₀, ozone, and nitrogen dioxide from 2012 to 2020.

⁷ The National Emissions Inventory includes only emissions from vegetation and soils in the biogenic sources category.

⁸ Nitrogen dioxide and volatile organic compounds are ozone precursor emissions.

Table 3-43
2020 Emissions Inventory by Source (Tons per Year)

County	Source	Carbon Monoxide	Nitrogen Oxides	PM ₁₀	PM _{2.5}	Sulfur Oxides	Volatile Organic Compounds
Doña Ana	Area sources ¹	4,874	1,252	5,023	1,366	54	3,832
	Off-road mobile ²	4,118	417	45	43	0	282
	On-road mobile ³	13,606	3,591	208	99	8	1,206
	Point sources ⁴	575	1,155	125	91	26	115
	Biogenics ⁵	1,456	336	0	0	0	6,984
	Wildfires	617	14	67	57	6	147
	Total	25,246	6,765	5,468	1,656	94	12,566
Luna	Area sources ¹	853	681	1,164	294	10	638
	Off-road mobile ²	478	45	5	4	0	44
	On-road mobile ³	3,423	1,169	44	30	2	255
	Point sources ⁴	216	480	69	57	26	69
	Biogenics ⁵	1,017	216	0	0	0	4,765
	Wildfires	0	0	0	0	0	0
	Total	5,987	2,591	1,282	385	38	5,771

Source: EPA 2023b

¹ Area sources are stationary sources that are too small or too numerous to be treated as individual point sources. Source categories include agricultural and prescribed burning, outdoor grilling and residential wood combustion, trains and commercial marine vessels, and other sources not covered by the point source category.

² Such as from construction, agriculture, industry, lawn and garden, commercial, logging, recreational vehicles, some recreational marine vehicles, and underground mining equipment) that does not operate on roads, excluding commercial marine vehicles, railways, and aircraft.

³ On-road mobile sources include emissions from motorized vehicles that normally operate on public roadways.

⁴ Point sources include individual facilities such as large energy and industrial sites (such as petroleum refineries, electric generating utilities, and manufacturing facilities), smaller point sources included voluntarily by state, local, and Tribal agencies (such as crematoria, dry cleaners, and gas stations), airport operation and aircraft landing and take-off emissions, and locomotive missions within railyards.

⁵ Natural (not human-caused) emissions from forests, vegetation, and soils.

Haze is caused by sunlight encountering particles of pollution in the air, resulting in the absorption and scattering of light. Haze results in reduced visibility and obscured views. Haze-causing air pollutants come from a variety of natural and human-made sources. Natural sources can include windblown dust and soot from wildfires. Human-made sources can include motor vehicles, electric utility and industrial fuel burning, and manufacturing operations.

The EPA instituted the Regional Haze Rule to improve air quality in national parks and wilderness areas that were designated as mandatory federal Class I areas under the Clean Air Act amendments (EPA 2022b). The nearest Class I areas to the decision area are the Gila Wilderness, approximately 50 miles away; White Mountain Wilderness, approximately 85 miles away; and the Guadalupe Mountains National Park, approximately 95 miles away. Visibility monitoring at sites in the Gila Wilderness and White Mountain Wilderness show a 30 percent and 20 percent improvement in visibility conditions on the haziest days, respectively, between 2002 and 2018 (BLM 2022c, Figure 2.39 and Figure 2.41, pp. 154-155). The New Mexico Environment Department Air Quality Bureau has submitted state implementation plans, as required under 40 CFR 51.309, to comply with the Regional Haze Rule.

Additional information on air pollutants, air quality standards and regulations, annual emissions, design values (concentrations of air pollutants), and air quality-related values is available in Section 2.1.1.1.1, Air

Quality, of the AMS (BLM 2022a) and in the air resources technical support document prepared for this RMP/EIS effort (Beardsley et al. 2022).

3.11.3 Environmental Consequences

Issue 1: How would the proposed management actions affect PM_{2.5}, PM₁₀, and expected visibility?

Summary of Analytical Methods

Impacts on air quality from PM_{2.5} and PM₁₀ emissions are determined based on a quantitative assessment of emissions and a qualitative analysis of the effects of these emissions on air quality, deposition, and visibility. These impacts are assessed within approximately 62 miles of the planning area boundary and for the duration of the plan.

Indicators

- Tons of particulate matter emissions based on miles traveled by on-road motorized vehicles
- Tons of particulate matter emissions from prescribed fires based on annual acres burned
- Tons of particulate matter emissions from non-road equipment used for livestock grazing, vegetation treatments, and travel management (road maintenance) based on the types and numbers of equipment and estimated hours of operation
- Tons of fugitive dust emissions based on surface area of exposed unpaved roads and trails

Assumptions

- There would be no development of the valid existing geothermal leases given the lack of historic activity. In addition, there would be no new mineral-related development because the decision area would remain closed to mining.
- Estimates of air emissions are based on recreational use of all-terrain vehicles (18,486,303 miles per year) and off-road motorcycles (1,387,047 miles per year), as well as off-road equipment use (3,500 miles per year and 408 hours) for road maintenance (Grant et al. 2022).
- Emissions from prescribed fires are based on acres burned from three fires (525 acres per year) and associated vehicle (248 miles per year) and off-road equipment use (192 hours) (Grant et al. 2022).
- Emissions from grazing activities are based on 92,446 AUMs for cattle and 493 AUMs for horses with 3,565 miles per year of vehicle travel and 150 hours of off-road equipment use for fence, pipeline, and reservoir maintenance (Grant et al. 2022).

Impacts Common to All Alternatives

Under all alternatives, the BLM would manage activities on public land, including those with National Landscape Conservation System designation, to maintain air quality compliance with the FLPMA; Clean Air Act, as amended; and New Mexico ambient air quality standards. BLM management would, at minimum, be consistent with the federal Class II area standards of visibility (regional haze) criteria, and no less than any local governments' air quality criteria.

Under all alternatives, recreation and demand are expected to continue to grow, resulting in increased travel and associated particulate matter emissions. More than 99 percent of contributions to PM_{2.5} and PM₁₀ (366 and 3,612 tons per year, respectively [Grant et al. 2022, Table 3-1, p. 17]) in the Monument

come from transportation and travel management. Motorized travel on unpaved roads and recreational use of OHVs create localized impacts on air quality from fugitive dust, carbon monoxide, and volatile organic compounds. Activities such as road construction and sand or gravel extraction would have appropriate measures (such as dust abatement) developed to mitigate impacts on air quality; these measures would be made a part of the permit or contract.

Movement of livestock across the planning area would create short-term, localized dust as livestock cross unvegetated surfaces and dirt trails. Grazing can also affect vegetation cover and soil conditions. This could indirectly affect air quality from wind-borne dust generation of disturbed surfaces. However, grazing would not be considered a surface-disturbing activity under proper livestock management that would minimize any disturbance and its associated impacts on air quality.

Impacts from fire management practices depend on the geographic extent, duration, and meteorological conditions during the burn. For example, wind and periods of good ventilation promote smoke dispersion. After a fire, indirect air quality impacts can occur from wind-borne dust generated in unvegetated areas. Use of prescribed fires for restoration creates smoke (particulate matter) and other criteria air and hazardous air pollutants; however, prescribed fires are conducted under specific conditions and timing that generate fewer emissions than those that would otherwise be produced by unmanaged wildfires. Air quality impacts from prescribed fire activities are minimized through compliance with the New Mexico State Smoke Management Program. Requirements for prescribed wildfires, including registering the burn, notifying State and nearby population centers of burn date(s), visual tracking, and postfire activity reports, all serve to minimize adverse impacts from prescribed fires. These requirements are codified in New Mexico Administrative Code 20.2.65, Smoke Management.

Under all alternatives, impacts on air quality from fugitive dust would occur along unpaved roads and disturbed surfaces. Impacts of fugitive dust are expected to increase over time as visitation is expected to continue to increase. Management actions that restrict resource use and minimize surface disturbance reduce general particulate matter emissions. To prevent and reduce air quality impacts from all BLM-authorized activities on BLM-administered lands, the BLM would implement mitigation measures developed on a case-by-case basis through NEPA or other statutory or regulatory processes. This would evaluate each impact to see if it is allowable and acceptable.

Alternative A (No Action Alternative)

Under the no action alternative, air quality management would continue to focus on the ACECs; the BLM would continue to manage the Organ/Franklin ACEC as a Class II area for air quality. Air quality protection would continue to be incorporated into all surface-disturbing activities. Particulate matter generation and impacts on air quality from livestock grazing and prescribed fires would continue at their current levels, while emissions from increased travel to the planning area would continue to increase.

Action Alternatives (Alternatives B through D)

Objectives and management directions for wildland fire ecology and management would be the same under all action alternatives. Under these management directions, the BLM would implement prescribed fire and fuels reduction treatments within Dripping Springs and other recreation areas as needed to protect public safety. When compared with Alternative A, these additional treatments would minimize the chances of wildfires, which generate more criteria air pollutants (including particulate matter) than

prescribed fires. Reduced particulate matter emissions, especially fine particulate matter (PM_{2.5}) can contribute to improvements in local and regional visibility.

In general, travel and transportation impacts on air quality from particulate matter emissions and any variations in impacts across the alternatives would occur locally. In areas that would be closed to OHV travel, impacts would cease, while in any remaining open areas (areas that are open for motorized travel along designated routes), impacts would continue to occur along unpaved roads and surfaces. Among the alternatives, Alternative B, followed by Alternative C, would result in decreased impacts in larger areas across the planning area. However, as visitation is expected to be the same under all alternatives, closures would restrict vehicle use to the remaining open areas, concentrating impacts from fugitive dust and particulate matter emissions. Conversely, under Alternative D, which would allow the largest areas open for motorized travel, impacts would increase in the areas closed under Alternative A. Because differences in impacts from fugitive dust (from coarse particulate matter [PM₁₀]) would generally be localized and temporary, visibility impacts would also be localized and temporary.

Under all action alternatives, a further analysis of air resources may be required before authorizing activities in the Monument to ensure compliance with the Clean Air Act Prevention of Significant Deterioration program and the Wilderness Act. Alternatives B and C would require land managers to review permit applications for new or modified pollution sources in the region to determine whether pollution sources would cause exceedances of NAAQS or impact air quality-related values, including visibility, scenic, cultural, physical, or ecological resources in the Monument. This would contribute to the protection of Monument resources more than under Alternatives A or D, which include no similar management direction.

Cumulative Impacts

The cumulative impact analysis area for air quality and climate includes the planning area and approximately 62 miles beyond the planning area boundary. Reasonably foreseeable projects in the area that would improve recreation and visitor use, such as maintenance to parking lots, toilet facilities, and trail accessibility, would likely cause an increase in recreational use and travel to the planning area. This increase would increase particulate matter emissions from transportation and travel management under all alternatives.

As described in the air resources technical support document, particulate matter emissions in the planning area are dominated by high wind events in the region (Beardsley et al. 2022, pp. 10). Transition to low-sulfur fuels may reduce PM_{2.5} emissions from combustion in vehicles. Potential increases in population, vehicles and other combustion sources, along with events such as dust storms, will likely increase particulate matter emissions in the future. This could be exacerbated to the extent that continuing changes in climate contribute to drier soil conditions (see **Section 3.12**, below). Overall, criteria pollutant emissions from BLM-administered activities in the Monument would continue to be small compared with regional emissions (less than 3 percent of planning area county emissions other than particulate matter [based on **Table 3-43** and Grant et al. 2022, Table 3-1, p. 17]).

Implementation of New Mexico's Regional Haze State Implementation Plan (NMED 2014) and Smoke Management Program (NMED 2005) will likely improve visibility in the Monument region through implementation of smoke and haze mitigation. Modeling indicates a continuing trend of improving visibility on both the most impaired and clearest days through 2028 in the region, though international emissions

from Mexico may influence improvement in the Monument. Modeled visibility from Interagency Monitoring of Protected Visual Environments monitors in Class I areas show a continuation of improving visibility trend for both most impaired days and clearest days through 2028. At nearby monitors, an improvement on most impaired days ranges from 0.31 to 0.55 deciviews, with an average of 0.42 deciviews, and on clearest days, the visibility improvement ranges from 0.2 to 0.4 deciviews, with an average of 0.26 deciviews. Modeled results indicate that improvements in the region are slower than needed to reach natural visibility by 2064 (Beardsley et al. 2022, pp. 21).

3.12 CLIMATE AND GREENHOUSE GASES

3.12.1 Key Points

- Under all alternatives, methane emissions from livestock grazing would be the dominant source of impacts from greenhouse gas emissions on climate change.
- There would be a potential reduction in greenhouse gas emissions from implementing prescribed fire. Prescribed fires may reduce the risk of wildfires and offset emissions from prescribed fires to a degree that would reduce the overall emissions from wildland fires.
- Overall, activities in the Monument are not a substantial source of greenhouse gas emissions. This is because of the limitations on emission-generating sources resulting from Monument and wilderness designations.

3.12.2 Affected Environment

The planning area is within the Chihuahuan Desert ecoregion. This region experiences large variations in temperature and precipitation. At an elevation of around 4,265 feet, temperatures can range from a high of 93 degrees Fahrenheit in the summer to a low of 23 degrees Fahrenheit in the coldest months (BLM 2017a). Annual temperatures are higher in the region's southeastern portion around the Rio Grande and Big Bend Ranch State Park, and cooler in the north near Socorro, New Mexico, and in the region's western portion near Silver City, New Mexico.

Precipitation is generally low; most precipitation falls during the late-summer monsoon season in the form of convective storms⁹ coming in from the Gulf of Mexico. The North American monsoon season in New Mexico can start in late June and extend into September, making July and August the wettest months across much of the state. In some regions of the state, monsoon rainfall accounts for half of the annual precipitation (NOAA 2022). May and June are usually the driest months. During El Niño years, October to May precipitation increases to about 1.5 times the average in the northern extent of the region. During La Niña years, October to May is drier, with only around half the average amount of rainfall. The arid nature of the region can be attributed to its location far from oceans (BLM 2017a).

Annual average temperatures in New Mexico have increased by about 2 degrees Fahrenheit since the 1970s, and the last decade was the warmest on record for the state. The state has also experienced an increasing trend in the number of extremely hot days and warm nights. Precipitation has been highly variable, with no obvious long-term trend and decades of unusually wet or dry conditions (NOAA 2022; NMBGMR 2022). The last extended drought (2011–2014) was the second-worst drought for the state

⁹ Storms, commonly referred to as thunderstorms, that are formed when surface heat causes moisture and other particles to rise into the atmosphere.

since the early 1950s, leading to near-record low reservoir levels (NOAA 2022). Also, four of the five lowest annual precipitation values since 1931 have occurred since 2000 (NMBGMR 2022).

Since 1980, the mean annual temperature in New Mexico increased by approximately 2.7 degrees Fahrenheit. Years between 2011 and 2020 were the warmest on record for the state, and the 3 hottest years observed each occurred since 2012. Along with higher mean temperatures, much of the state has seen increases in the number of extremely hot days with maximum temperature at or above 100 degrees Fahrenheit (BLM 2023a, Section 4.3).

Climate change is defined by the Intergovernmental Panel on Climate Change (IPCC) as “a change in the state of the climate that can be identified (for example, by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer” (IPCC 2021). Ongoing scientific research has identified the potential impacts of greenhouse gas emissions (including carbon dioxide, methane, nitrous oxide, and several trace gases) on global climate. Through complex interactions on a regional and global scale, these greenhouse gas emissions cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although greenhouse gas emission levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused carbon dioxide concentrations to increase dramatically and are likely to contribute to overall global climatic changes.

In 2021, the US rejoined the Paris Agreement, launched the Global Methane Pledge, and set an ambitious Nationally Determined Contribution to reduce net greenhouse gas emissions by 50 to 52 percent by 2030 (United Nations Framework Convention on Climate Change 2021). The 2021 Long-Term Strategy of United States outlines the next steps on how the US can reach a net-zero emissions by 2050 (US Department of State and the US Executive Office of the President 2021).

Different greenhouse gases contribute differently to the warming of the atmosphere based on how long they persist in the atmosphere and their warming effect. Carbon dioxide equivalent (CO₂e) is a metric defined on the basis of different global warming potentials that is used to describe the relative strength of each gas. For example, compared with carbon dioxide, methane has a global warming potential that is 29.8 times higher on a 100-year time scale and 82.5 times higher on a 20-year time scale (IPCC 2021). Methane dominates in shorter timescales because it lasts for a shorter period of time compared with carbon dioxide (12 years compared with centuries). For a more detailed discussion of global warming potentials, see BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends (BLM 2023a, Section 3.4).

US greenhouse gases emissions in 2021 were 6,340 million metric tons of CO₂e, which is an increase of 5.2 percent from 2020 levels and a 15 percent decrease from 2005 levels (BLM 2023a, Table 5-1). The US emitted 12 percent of global greenhouse gas emissions and had per capita emissions that were three times the global average (BLM 2023b). In 2020, New Mexico produced a total of 73.6 million metric tons of greenhouse gas emissions, where 49 percent of the direct energy-related emissions were emitted from BLM energy-related sources (36.2 million metric tons of CO₂e; BLM 2023a, Table 5-2 and Table ES-2). As shown in **Table 3-44**, the 2020 county-level greenhouse gas emissions in Doña Ana and Luna Counties was 2.8 and 1.8 million metric tons of CO₂e, respectively, for the 100-year time horizon and 3.3 and 1.8 million metric tons of CO₂e, respectively, for the 20-year time horizon.

Table 3-44
2020 Greenhouse Gas Emissions by Source (Metric tons per Year)

County	Source	Carbon Dioxide	Methane	Nitrous Oxide	100-year CO ₂ e ¹	20-year CO ₂ e ²
Doña Ana	Area sources ³	62,736	7	2	63,367	63,734
	Off-road mobile ⁴	111,160	16	0	111,642	112,494
	On-road mobile ⁵	1,388,455	76	21	1,396,365	1,400,365
	Point sources ⁶	1,021,046	7,770	3	1,253,340	1,662,801
	Biogenics ⁷	0	0	0	0	0
	Wildfires	9,261	28	0	10,108	11,606
	Total	2,592,658	7,897	26	2,834,822	3,251,000
Luna	Area sources ³	47,441	6	1	47,943	48,259
	Off-road mobile ⁴	10,899	2	0	10,963	11,078
	On-road mobile ⁵	353,663	17	4	355,170	356,043
	Point sources ⁶	1,374,998	389	3	1,387,272	1,407,754
	Biogenics ⁷	0	0	0	0	0
	Wildfires	0	0	0	0	0
	Total	1,787,000	414	8	1,801,349	1,823,134

Source: EPA 2023b

¹ 100-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 29.8; nitrous oxide = 273 from the IPCC Sixth Assessment Report (AR6; IPCC 2021).

² 20-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 82.5; nitrous oxide = 273 from the IPCC AR6 (IPCC 2021).

³ Area sources are stationary sources that are too small or too numerous to be treated as individual point sources. Source categories include agricultural and prescribed burning, outdoor grilling and residential wood combustion, trains and commercial marine vessels, and other sources not covered by the point source category.

⁴ Off-road mobile sources include mobile equipment (such as construction, agriculture, industrial, lawn and garden, commercial, logging, recreational vehicles, some recreational marine vehicles, and underground mining equipment) that do not operate on roads, excluding commercial marine vehicles, railways, and aircraft.

⁵ On-road mobile sources include emissions from motorized vehicles that normally operate on public roadways.

⁶ Point sources include individual facilities such as large energy and industrial sites (such as petroleum refineries, electric generating utilities, and manufacturing facilities), smaller point sources included voluntarily by state, local, and Tribal agencies (such as crematoria, dry cleaners, and gas stations), airport operation and aircraft landing and take-off emissions, and locomotive missions within railyards.

⁷ Natural (nonanthropogenic) emissions from forests, vegetation, and soils.

More information on climate change, greenhouse gases and their sources, and climate projections may be found in Section 2.1.11.2, Greenhouse Gases and Climate, of the AMS (BLM 2022a) and in the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends (BLM 2023a).

3.12.3 Environmental Consequences

Issue 1: How would BLM management activities and allocations for allowable uses contribute to greenhouse gas emissions in the Monument?

Summary of Analytical Methods

Major BLM-authorized activities within the Monument that have the potential to impact greenhouse gas concentrations include livestock grazing operations, travel and transportation management, and prescribed fire activities. The impact analysis is based on a quantitative assessment of greenhouse gas emissions from these activities and a qualitative analysis of the effects of these emissions on climate change.

Because climate change is a global issue, the analysis area for greenhouse gases cannot be restricted to one region. For the purposes of the RMP/EIS, the greenhouse gases/climate change analysis area is focused on New Mexico and the United States, but worldwide data are also used.

Indicators

- Metric tons of carbon dioxide, methane, and nitrous oxide emissions and their carbon dioxide equivalencies from on-road equipment based on estimated vehicle miles traveled
- Metric tons of carbon dioxide, methane, and nitrous oxide emissions and their carbon dioxide equivalencies from prescribed fire based on annual acres burned
- Metric tons of methane emissions from livestock based on the number of AUMs
- Metric tons of carbon dioxide, methane, and nitrous oxide emissions and their carbon dioxide equivalencies from non-road equipment used based on the types and numbers of equipment and estimated hours of operation

Assumptions

- There would be no development of the valid existing geothermal leases given the lack of historic activity. In addition, there would be no new mineral-related development because the decision area would remain closed to mining.
- Estimates of greenhouse gas emissions are based on recreational use of all-terrain vehicles (18,486,303 miles per year) and off-road motorcycles (1,387,047 miles per year), as well as off-road equipment use (3,500 miles per year and 408 hours) for road maintenance (Grant et al. 2022).
- Greenhouse gas emissions from prescribed fires are based on acres burned from three fires (525 acres per year) and the associated vehicle (248 miles per year) and off-road equipment use (192 hours) (Grant et al. 2022).
- Greenhouse gas emissions from grazing activities are based on 85,874 AUMs¹⁰ for cattle and 493 AUMs for horses with 3,565 miles per year of vehicle travel and 150 hours of off-road equipment use for fence, pipeline, and reservoir maintenance (Grant et al. 2022).

Impacts Common to All Alternatives

An emissions inventory (Grant et al. 2022) was prepared as part of the air resources technical support document prepared for this RMP/EIS (Beardsley et al. 2022). **Table 3-45**, below, shows the estimated greenhouse gas emissions from quantifiable sources within the Monument. Estimated emissions are expected to be similar across the no action and action alternatives unless otherwise noted in the analysis presented for the individual alternatives.

Under all alternatives, recreation and demand are expected to continue to grow, resulting in increased travel to the planning area and increased greenhouse gas emissions from such activities. Transportation and travel management activities within the planning area are estimated to contribute 85 percent of the total carbon dioxide emissions (**Table 3-45**; Grant et al. 2022).

¹⁰ The number of AUMs has changed since the preparation of Grant et al. 2022; methane emissions have been revised to account for the reduction in AUMs resulting from a separate grazing allotment decision action (BLM 2023a).

Table 3-45
Annual Greenhouse Gas Emissions by Source

Source	Annual Emissions (metric tons per year)			AR6 100-Year CO ₂ e* (thousand metric tons per year)	AR6 20-Year CO ₂ e** (thousand metric tons per year)
	Carbon Dioxide	Methane	Nitrous Dioxide		
Livestock grazing	5	15,584	1	421	1,205
Prescribed fires and vegetation treatments	816	3	6	3	3
Comprehensive travel and transportation management	4,674	5	1	5	5
Total	5,495	15,592	8	429	1,213

Source: Grant et al. 2022

*100-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 29.8; nitrogen dioxide = 273 from IPCC 2021

**20-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 82.5; nitrogen dioxide = 273 from IPCC 2021

Under all alternatives, livestock grazing would be the dominant source of greenhouse gas emissions in the Monument due to the higher global warming potential of methane (**Table 3-45**; Grant et al. 2022). Emissions of methane from livestock grazing comprise over 98 percent of the total greenhouse gas emissions from the Monument.

Prescribed fire and vegetation treatments would be a smaller source of greenhouse gas emissions (**Table 3-45**; Grant et al. 2022). Under proper management, prescribed fires would be expected to produce less greenhouse gas emissions than uncontrolled wildfires.

For a 100-year time horizon, the average annual total greenhouse gas emissions from emission-generating activities in the Monument comprise approximately 0.58 percent of New Mexico's total CO₂e emissions of 73.6 million metric tons in 2020 (BLM 2023a, Table 5-2), 0.04 percent of the total BLM CO₂e emissions of 1,033.2 million metric tons in 2022, and less than 0.01 percent of the total US CO₂e emissions of 6,899 million metric tons in 2020 (BLM 2023a, Table ES-2).

To inform agency decision-making, the social cost of greenhouse gases (SC-GHG) is used to represent the monetized value of future market and nonmarket costs associated with carbon dioxide, methane, and nitrous oxide emissions. The SC-GHG includes the estimated value of all climate change impacts, including but not limited to public health effects, changes in net agricultural productivity, property damage from increased flood risk, natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services (US Interagency Working Group on the Social Cost of Greenhouse Gases [IWG] 2021). These numbers do not constitute a complete cost-benefit analysis, nor do they present a direct comparison with other impacts analyzed in this document.

Table 3-46 presents the SC-GHGs associated with quantified emissions from BLM-authorized activities in the Monument, under all alternatives. The SC-GHG was calculated based on IWG estimates of social cost per metric tons of emissions for a given emissions year using 2022 base year and emissions from 2024 through 2044. There are multiple sources of uncertainty inherent in the SC-GHG estimates, including those that relate to physical effects of greenhouse gas emissions, human behavior, future population

Table 3-46
SC-GHG Associated with Estimated Emissions*

Greenhouse Gas	Average, at 5 Percent Discount Rate	Average, at 3 Percent Discount Rate	Average, at 2.5 Percent Discount Rate	95th Percentile, at 3 Percent Discount Rate
Carbon Dioxide	1,398,000	5,365,000	8,138,000	16,302,000
Methane	195,388,000	496,369,000	668,551,000	1,322,785,000
Nitrous Oxide	824,000	2,909,000	4,380,000	7,725,000
Total	197,610,000	504,643,000	681,069,000	1,346,812,000

Source: Calculated using social cost per ton from IWG 2021 and the BLM's estimates of emissions.

*Dollar values rounded to the nearest \$1,000 and in 2020 dollars.

growth and economic changes, and potential adaptation (IWG 2021). To better understand and communicate the quantifiable uncertainty, the IWG recommends reporting four SC-GHG estimates in any analysis. Three of the SC-GHG estimates reflect the average damages from the multiple simulations at each of the three discount rates (2.5 percent, 3 percent, and 5 percent discount rates). The fourth value represents a low probability high damage scenario (95th percentile of damages), that represents an upper bound of damages within the 3 percent discount rate. This is a low probability, high damage scenario, that represents an upper bound of damages within the 3 percent discount rate model.

Alternative A (No Action Alternative)

Under the no action alternative, the BLM would continue to limit motorized travel to designated routes on 253,702 acres of land and keep the additional 242,889 acres closed to all motorized use. Recreation is expected to increase in the Monument, resulting in increased travel to the planning area; this would increase greenhouse gas emissions. Livestock grazing would continue across 492,062 acres, subject to careful planning and AMPs. Greenhouse gas emissions from livestock grazing would continue at their current levels. Prescribed fires' contributions to greenhouse gas would also continue at their current levels; however, they would be greater than the emissions under the action alternatives due to potential positive impacts from reducing wildfires and their associated risks under the action alternatives. Alternative A is anticipated to result in greenhouse gas emissions similar to those shown in **Table 3-45**.

Action Alternatives (Alternatives B through D)

Under the action alternatives, the BLM would implement prescribed fires in Dripping Spring and other recreation areas where fuel treatments would be used to reduce public safety risks from severe wildfires. Any greenhouse gas emissions due to prescribed fires would be less than those produced by uncontrolled wildfires. Implementation of prescribed fires under the action alternatives would reduce the potential for occurrences of severe, uncontrolled wildfires. Therefore, while greenhouse gas emissions from prescribed fires would increase to levels potentially greater than those shown in **Table 3-45**, the greenhouse gas emissions from wildland fires over the long term would be less, compared with Alternative A.

Similar to the no action alternative, recreation and travel to the area, as well as the associated greenhouse gas emissions, are expected to continue to increase. However, if limited access results in less usage, then any future increases in greenhouse gases would be smallest under Alternative B, which would close the largest area to motorized activity (11 percent more acres than under Alternative A) and greatest under Alternative D (1 percent fewer acres than under Alternative A). On the other hand, limited access could result in relocation of OHV travel, rather than a reduction, and equal continued contribution to

greenhouse gases under all alternatives. Emissions under all action alternatives are anticipated to result in greenhouse gas emissions similar to those shown in **Table 3-45**.

Livestock grazing would continue to be the largest source of greenhouse gas emissions within the planning area (Grant et al. 2022). The majority of greenhouse gas emissions from grazing are due to enteric fermentation and manure management, calculated using AUMs. Emissions from livestock grazing under all action alternatives are anticipated to be the same as those shown in **Table 3-45**. However, sustainable grazing management can restore degraded lands to improve production and increase carbon input and sequestration.

Cumulative Impacts

The activities in the Monument described above would result in the emission of greenhouse gases that would contribute to global warming and the climate change impacts discussed under *Affected Environment*. **Table 3-47** shows the estimated emissions over the life of the RMP.

**Table 3-47
Life-of-Plan Greenhouse Gas Emissions by Source**

Source	Life-of-Plan Emissions* (metric tons per year)			AR6 100-Year CO ₂ e** (thousand metric tons per year)	AR6 20-Year CO ₂ e*** (thousand metric tons per year)
	Carbon Dioxide	Methane	Nitrous Oxide		
Livestock grazing	91	282,694	18	8,429	24,091
Prescribed fires and vegetation treatments	14,802	54	109	46	49
Comprehensive travel and transportation management	84,786	91	18	92	97
Total	99,679	282,839	145	8,567	24,237

Source: Grant et al. 2022

*The life of the plan is assumed to be 20 years.

**100-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 29.8; nitrogen dioxide = 273 from IPCC 2021

***20-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 82.5; nitrogen dioxide = 273 from IPCC 2021

Reasonably foreseeable projects in the area that will improve recreation and visitor use, such as maintenance to parking lots, toilet facilities, and trail accessibility, will likely cause an increase in recreational use and travel to the planning area over the long term. While this will increase greenhouse gas emissions from transportation and travel to the area under all alternatives, the cumulative impacts on greenhouse gas emissions would likely be higher under Alternatives A and D (due to less restrictive travel and recreation management in the planning area) and smaller under Alternative B (due to having the most restrictive travel and recreation management in the planning area).

On a global scale, carbon neutrality would result in atmospheric concentrations of greenhouse gases reaching an equilibrium, which could stabilize climate change and limit global warming. The US is anticipated to have met and surpassed the 2020 target of a 17 percent reduction in net economy-wide emissions below 2005 levels and is broadly on track to meet the 2025 goal of 26 percent to 28 percent emissions reductions below 2005 levels (UNFCCC 2021; BLM 2023b).

3.13 CULTURAL RESOURCES

3.13.1 Key Points

- The Monument includes a full range of cultural resources, but only a very small portion has been formally surveyed.
- Management as a Monument and extensive areas managed as wilderness would preclude many activities that could otherwise impact cultural resources.
- Reducing or avoiding the potential for impacts on cultural resources under all alternatives depends largely on adhering to existing regulatory procedures for the consideration of effects on cultural resources (for example, Section 106 of the National Historic Preservation Act; the BLM and New Mexico State Historic Preservation Office [SHPO] Programmatic Agreement; and other agreements or protocols, as appropriate).

3.13.2 Affected Environment

Cultural resources are defined as a definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses. Cultural resources also may include definite locations (sites or places) of traditional cultural or religious importance to specified social or cultural groups, or both (BLM 2004c). Cultural resources may also include traditional cultural properties, a phrase commonly used in reference to a property of traditional religious and cultural importance as defined in the National Historic Preservation Act. They derive significance from traditional values associated with them by a social and/or cultural group, such as an Indian Tribe or local community, and they commonly refer to a culturally sensitive area that may qualify for listing on the National Register of Historic Places, if they meet the applicable criteria (BLM 2016b).

Decades of research have documented that the planning area's cultural history extends back approximately 12,000 years and perhaps substantially longer. Claims have been put forth to suggest a 50,000 BP (before present) date for human occupation in the area (MacNeish and Libby 2004), although the 21,000–23,000 BP dates provided by the work of Bennett at White Sands National Park are the most recent and reliable dates currently available for pre-Clovis occupations locally (Bennett et al. 2021). Ongoing study of the thousands of archaeological sites and historic resources that dot the landscape of southern New Mexico continues to add information about the region's cultural history. The Monument contains sites dating from the Paleoindian period 12,000 years ago to the World War II era. Prehistoric sites (prior to European arrival in the Americas) are the most common. A summary of the planning area's cultural history is included in the AMS (BLM 2022a).

Cultural resources are largely identified by completing archaeological inventories (surveys) to locate and evaluate the resources within an area. Information about the status of the inventory and evaluation of cultural resources in the planning area was compiled from two sources: annual reports of the BLM cultural resource program and the New Mexico Cultural Resource Information System. While both sources of information have their limitations, they provide a basis for characterizing the planning area's cultural resources.

Cultural resource inventories of the four units in the Monument are limited, with between 0.66 and 14.85 percent of the total areas surveyed (see **Table 3-48**). In total, less than 2 percent of the planning area has been inventoried for archaeological resources, resulting in the identification of 325 archaeological sites as of 2022.¹¹ Most of these sites date to the prehistoric period, with some dating back almost 12,000 years. However, there are also a number of sites dating to the historic period (78 total), particularly the Territorial (pre-1912) and Statehood (post-1912) periods.

Table 3-48
Acres Surveyed and Known Cultural Resources in the Monument

Mountain Unit	Acres	Acres Surveyed	% Surveyed	No. of Sites
Organ Mountains	71,232	3,298	4.62	131
Doña Ana Mountains	7,927	1,178	14.85	21
Sierra de las Uvas and Robledo Mountains	201,915	3,546	1.75	142
Potrillo Mountains	216,084	1,438	0.66	31
Total	497,158	9,460	<2	325

Sources: BLM GIS 2022; G. Leitermann, BLM LCDO Monument archaeologist, personal communication with Perry Lown, AECOM cultural resource specialist, on November 10, 2022

Cultural resources in the Monument are currently affected by a number of human and natural causes. Pot hunting, collecting, and looting have occurred and may occur throughout the planning area with prehistoric pottery and projectile points (arrow and dart points) as a common target for looters. Increased visitation of archaeological sites has also resulted in increased vandalism, particularly of historic buildings and rock art sites. Increases in recreation also impact cultural resources. OHV activity has been noted at various sites in the Monument; this activity can cause extensive erosion and damage to archaeological resources and deposits. Damage to archaeological sites has also been noted as a result of other recreational activities, such as camping, bouldering and rock climbing, and even hiking in and near known archaeological sites.

Ongoing livestock grazing is another source of potential impacts on cultural resources. The congregation of cattle within archaeological sites is a particular concern because such areas suffer significant surface disturbance and denuding of the vegetation. Similarly, cattle trails going through sites, cattle rubbing up against historic structures, and trampling of artifacts are all potential adverse impacts on cultural resources from livestock grazing. Finally, natural processes, some resulting from a changing climate, are affecting cultural resources by increasing soil erosion; wildfire occurrence and severity; and weather events, such as severe storms that increase weathering and erosion. Additional information is available in Sections 2.1.12 and 3.1.1, Cultural Resources, of the AMS (BLM 2022a).

3.13.3 Environmental Consequences

Issue 1: How would the integrity of known and unknown cultural resources be affected by ground disturbance and increased use and access?

Summary of Analytical Methods

In analyzing the impact of proposed management directions on the integrity of known and unrecorded cultural resources, the best available scientific literature and GIS data were reviewed, and the potential impacts on resource integrity under the four alternatives (Alternatives A through D) were compared. The

¹¹ G. Leitermann, BLM Las Cruces District Office Monument archaeologist, personal communication with Perry Lown, AECOM cultural resource specialist, on November 10, 2022.

project area described in this section is the decision area (BLM-administered lands). The temporal scale of the analysis is the life of the plan.

Indicators

- Potential for adverse effects on cultural resources through ground disturbance or alterations of the setting
- Potential for increased use or access, resulting in inadvertent incremental damage, casual collection of artifacts, or vandalism

Assumptions

- The BLM will follow existing regulatory procedures for the consideration of impacts on cultural resources (for example, Section 106 of the National Historic Preservation Act or the BLM and New Mexico SHPO Programmatic Agreement).
- Sites are nonrenewable resources, and damage to them typically results in permanent impacts.
- Many more sites and resources exist in the Monument than are currently inventoried; this includes traditional cultural properties and other data sets outside existing inventoried cultural data, including but not limited to, knowledge of sites from communities in the planning area.
- Where cultural resource surveys have not been conducted, the BLM assumes sites exist across the planning area. This analysis does not involve a site-specific impact analysis; it only quantifies known sites in an area to demonstrate current knowledge of site location and distribution.
- Areas of high potential for cultural resource site locations have not been modeled.
- Many sites are likely significant for regional and national history, including prehistoric sites; however, they have never been evaluated for listing on the National Register of Historic Places.
- This analysis assumes all sites are eligible until evaluated, and they are subject to the impacts discussed.
- Current recreation and demand in the planning area will continue and are likely to increase (see **Section 3.16**, Recreation).

Impacts Common to All Alternatives

Under all alternatives, continuing to adhere to the existing laws, such as the National Historic Preservation Act; executive orders or presidential proclamations, such as Presidential Proclamation 9131 (2014); and cultural resource policies (for example, BLM manuals and handbooks, such as BLM Manual 8100, The Foundations For Managing Cultural Resources) would protect culturally significant resources from ground-disturbing activities and alterations in setting. Additionally, continued consultation and cooperation with the SHPO and Native American Tribes would allow information on cultural properties and cultural landscapes to continue to be compiled. This would allow better future management and protection of the integrity of these resources.

Increased recreation and visitation increase the potential for casual collection of artifacts, inadvertent incremental damage, and vandalism. These negatively impact the integrity of known and unrecorded cultural resources.

Under all alternatives, the Dripping Springs Natural Area will continue to be closed to grazing. This would reduce the potential for impacts on cultural resources from ground disturbance associated with livestock trampling, crowding, and range facilities.

Under all alternatives, the Monument's entire area would continue to be withdrawn from mineral entry (**Table 2-1, Appendix A, Figure 2-4**, Alternatives A, B, C, and D: Minerals). This would continue to eliminate the potential for impacts on cultural resources from ground disturbance by mineral resource development.

Under all alternatives, the potential impact on cultural resources from ground disturbance within ROWs is similar. Continued adherence to existing laws and policies would work to protect culturally significant resources as well as mitigate potential adverse impacts stemming from ground-disturbing activities in these areas.

Under all alternatives, Kilbourne Hole would remain designated as an NNL. By reducing the amount of potentially ground-disturbing activities that could occur there, this designation would continue to reduce the potential for impacts on cultural resources in this 5,460-acre area (**Table 2-1, Appendix A, Figure 2-26**, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks).

Under all alternatives, 239,596 acres of land (**Table 2-1, Appendix A, Figure 2-26**, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks) within the Monument would remain designated as wilderness. By reducing the number of potentially ground-disturbing activities that could occur in wilderness, this designation would continue to reduce the potential for impacts on cultural resources from ground disturbance in these areas.

Under all alternatives, the Butterfield Overland NHT will be managed in accordance with a cultural resource management plan. This includes management as a potentially eligible historic property until complete archaeological inventory and National Register of Historic Places eligibility evaluation per the National Historic Preservation Act takes place. Ground-disturbing activities would not be permitted within a certain distance of the Butterfield Overland NHT. This distance ranges from one-quarter mile under Alternatives A and D, to one-half mile under Alternative C, and all the way to 1 mile under Alternative B. These actions would reduce the potential for impacts on the trail from ground disturbance while increasing the potential impacts on the trail from increased recreation and visitation. Under all action alternatives, the Monument staff would develop interpretive educational materials for the Butterfield Overland NHT. For those exposed to the materials, these materials would foster understanding and appreciation for the Butterfield Overland NHT and cultural resources generally. Ideally, this would reduce impacts from the casual collection of artifacts, inadvertent incremental damage, and vandalism due to increased recreation and visitation.

Under all alternatives, Section 5(c) of the Organ Mountains-Desert Peaks Conservation Act requires the Secretary of the Interior to "attempt to enter into an agreement" with the Commissioner of Public Lands of New Mexico to exchange approximately 11,000 acres of state trust land within the Monument's Desert Peaks area with an unspecified acreage of BLM-administered lands. This would reduce the potential for impacts on any known or unrecorded cultural resources in this area from ground-disturbing activity, such as mineral development; however, it also would increase the potential impacts on cultural resource integrity by opening these acres to increased recreation and visitation.

Climate change, in particular climate-driven changes in ground cover and ground-disturbing natural processes, is an emerging stressor on cultural resources. More frequent and more intense droughts, wildfires, and storms will increase the potential erosion of soils and changes in the vegetation cover. They also will result in direct damage to delicate materials (Peterson 2018; Davis 2018). These impacts from a changing climate could adversely affect cultural resources in and immediately around the planning area similarly under all alternatives.

Alternative A

Under Alternative A, the BLM would continue to accomplish protection of cultural resources through the application of both administrative (such as OHV closure) and physical (such as fencing) measures. Interim protection of cultural resources would continue to focus primarily on the patrol and surveillance plan described in the proposed Mimbres RMP (BLM 1992) and referenced in the 1993 Mimbres Approved RMP and Record of Decision (BLM 1993) until specific cultural resource management objectives are developed. Patrolling known cultural resource sites, combined with site recordation on patrols, as described, would positively impact the integrity of known and unrecorded cultural resources by identifying resource management needs and mitigative measures for known cultural resources that are deteriorating from or threatened by impacts, such as vandalism or ground disturbance from unauthorized recreation.

Under Alternative A, an active program of signing cultural resource properties under threat of active or potential vandalism would continue. This would continue to reduce the potential for impacts on cultural resources by discouraging unauthorized recreation and collection activities by visitors; however, it could also increase the potential for impacts on cultural resources through increased recreation and visitation brought on by bringing attention to the properties.

Under Alternative A, the BLM would consult with the New Mexico State Historic Preservation Officer and Tribes for any new ground-disturbing activities associated with livestock grazing. This would continue to reduce impacts due to ground-disturbing activities, such as range improvements.

Under Alternative A, the BLM would continue to perform a non-project-related survey and analysis of cultural resources that is greater than what is generally performed across the BLM district to meet the requirements to identify resources for research or public interpretation. This would continue to positively impact the integrity of known and unrecorded cultural resources by allowing for management decisions aimed at reducing the natural and human-caused impacts on these resources.

Action Alternatives (Alternatives B through D)

Under all action alternatives, the BLM would accomplish protection of cultural resources through the application of both administrative (such as OHV closure) and physical (such as sign postings) measures. A site monitoring program would aid in assessing the condition of vulnerable significant sites and whether further management protections are needed for the resource. This would positively impact the integrity of known and unrecorded cultural resources by allowing for management decisions that respond to yet unrecognized threats to the resources, such as vandalism or ground disturbance from unauthorized recreation.

While the Butterfield Overland NHT would be protected from nearby ground disturbance to some degree under all the alternatives, only under the action alternatives would both the Butterfield Overland NHT and the Camino Real de Tierra Adentro NHT (outside of but within 3 miles of the Monument) require a

viewshed analysis for proposed ground activities within 3 miles of the NHT on either side. Although the range of buffers for ground-disturbing activity considered under all the alternatives is likely adequate to protect the NHT's recreational values and many cultural resource-related values, the additional area subject to viewshed analysis under the action alternatives would better enable the BLM to protect the NHT from changes in setting related to visual impacts.

Under all action alternatives, the BLM would attempt to enter into an agreement to initiate an exchange for 240 acres of state trust land within the Monument boundary, in accordance with the Dingell Act. This would reduce the potential for impacts on any known or unrecorded cultural resources on this land from ground-disturbing activity, such as mineral development; however, it also would increase the potential impacts on cultural resource integrity by opening these acres to increased recreation and visitation.

Under all action alternatives, the BLM would not allow campfires and camping within archaeological sites. This would reduce potential impacts on any known or unrecorded cultural resources in these areas by reducing visitation and ground-disturbing activities (campfires, tent erection, and cathole excavation).

Under all action alternatives, recreation with domestic pets and pack animals would not be allowed in cultural resource locations listed or eligible for listing on the National Register of Historic Places, with the exception of historic roads and trails. This would reduce the potential impacts on any known or unrecorded cultural resources in these areas by reducing visitation and ground-disturbing activities, such as trampling.

Under all action alternatives, the BLM would not only consult with the New Mexico State Historic Preservation Officer and Tribes for any new ground-disturbing activities associated with livestock grazing, as under Alternative A, but would consult with them when livestock grazing may affect cultural resources and Tribal interests. This more inclusive management would further reduce the potential impacts on any known or unrecorded cultural resources in these areas by reducing other sources of impact on cultural resources related to grazing, such as large visual changes.

Unlike under Alternative A, under all action alternatives the entire Monument would be closed to grazing by domestic sheep and goats. This would reduce the potential for impacts on resources of importance to Tribes from broad changes to visual resources or ground disturbance associated with livestock trampling, crowding, and construction of range facilities.

Under all action alternatives, the BLM would implement permanent or temporary closures to recreation in areas with sensitive cultural resources, such as rock climbing areas. These actions would reduce the potential impacts on cultural resources from casual collection of artifacts, inadvertent incremental damage, and vandalism due to increased recreation and visitation.

Under all action alternatives, the BLM would undesignate the Robledo Mountains ACEC and the Aden Lava Flow RNA (**Appendix A, Figure 2-22, Alternative A: Areas of Critical Environmental Concern and Research Natural Areas**). These would still fall within designated wilderness areas (**Table 3-14**). Under the designation change, cultural resources would be provided similar protections; therefore, this would result in no new impacts on cultural resources compared with management under Alternative A.

The overall acres of designated wilderness, NNLs, RNAs, and national scenic and historic trails would be the same across all action alternatives (see **Table 2-1**), though the acreage designated as ACECs would

vary among them. The greatest acreage of ACECs would be designated under Alternative B, then Alternatives A, C, and D in that order (71,359 acres, 64,073 acres, 38,085 acres, and no acreage, respectively; see **Appendix A, Figures 2-22, 2-23, and 2-24** and **Table 2-1**).

Despite the difference in ACEC designations, the protections afforded to cultural resources through protections against ground disturbance would not differ substantially across alternatives. This is because most areas where the ACECs would not be designated would remain designated wilderness under the action alternatives, and allowable uses would be similar regardless of the total ACEC acreage. One exception would be in the Doña Ana Mountains ACEC under Alternative B, which would close the area to OHV use. Because of this, cultural resources would be more protected from ground disturbance in that area under Alternative B, when compared with Alternative A and the other alternatives.

The action alternatives would all manage the same acreage as VRM Classes I and II (244,122 acres of Class I and 252,467 acres of Class II, compared with 241,070 acres of Class I and 41,099 acres of Class II under Alternative A). The action alternatives would all provide greater potential protection against large visual changes in the Monument compared with Alternative A. However, because Proclamation 9131 prohibits many uses in the Monument, such as mineral entry or new ROW developments, the potential for large visual changes would not vary substantially across alternatives, despite the changes in VRM Class designations.

The potential for increased use or access, resulting in inadvertent incremental damage, casual collection of artifacts, or vandalism, would vary by alternative. Under Alternative B, the BLM would provide opportunities for recreation and travel with the most restrictions of any alternative, in the form of areas closed to OHV use (**Appendix A, Figure 2-18**, Alternative B: Transportation and Access). Under Alternative C, the BLM would reduce opportunities for recreation and travel compared with Alternative A, though not as much as under Alternative B (**Appendix A, Figure 2-19**, Alternative C: Transportation and Access). Alternative D would have the fewest restrictions on recreation and travel (**Appendix A, Figure 2-20**, Alternative D: Transportation and Access). All areas not closed to OHV use would remain limited to designated roads, per Proclamation 9131 (2014). Under Alternatives B and C, increased restrictions on travel and recreation from OHV closures would result in a reduced potential for impacts on cultural resources' integrity from increased use or access, compared with under Alternative A. Under Alternative D, decreased acreage of OHV closures would result in increased inadvertent incremental damage, casual collection of artifacts, or vandalism, when compared with Alternative A.

Cumulative Impacts

The cumulative impact analysis area for cultural resources is the planning area. Past and present actions that have likely affected cultural resources in this region may include such activities as route and infrastructure development; mining and mineral use; unauthorized artifact collecting; recreation; and the effects of natural processes, including erosion. Increased recreation and visitation in the planning area could lead to more discovery of cultural sites and unauthorized artifact collection or vandalism.

Cumulative impacts due to increased visitation are likely to be highest among Alternative D, then Alternatives A, C, and B in that order. This is due to the number of acres with restrictions on recreation and travel management under each alternative.

Reasonably foreseeable future actions with the potential to impact the integrity of cultural resources are similar to past and present actions, regardless of the alternative selected. Other projects in the area that are likely to increase recreation and visitor use are actions like maintenance or improvements to parking lots, roads, toilet facilities, and trail accessibility, and construction of new visitor facilities, such as those proposed at Dripping Springs. The designation and management of the planning area as a national monument will facilitate archaeological research and protect valuable cultural resources from ground-disturbing activities and changes in setting under all alternatives. Research that may help to inform better management practices or benefit descendant communities will be prioritized.

3.14 VISUAL RESOURCES

3.14.1 Key Points

- Under Alternative A, the BLM would continue to manage 89,861 acres in a manner that could allow activities that have an increased potential to change the scenic quality in areas with high value (VRI Class II).
- Under Alternatives B, C, and D, there are no areas where the visual quality would be potentially allowed to degrade.

3.14.2 Affected Environment

The BLM manages visual resources through the BLM's VRM system. The VRM program provides a nationally consistent way of inventorying, planning, and managing public lands and scenic values. During the land use planning process, the BLM allocates VRM classes considering the visual resources inventory, other resource values, and other potential land use demands. The VRM objectives describe the limits of the allowable visual change to the characteristic landscape (BLM 2022c).

The planning area is primarily within the Basin and Range physiographic province (BLM 2022a), whose landscape setting is characterized by isolated ranges; large, dissected block mountains separated by aggregated desert plains; and broad basins. Within the Monument, the most prominent topographic features are the Organ Mountains, West Potrillo Mountains, Robledo Mountains, Sierra de las Uvas Mountains, and Doña Ana Mountains.

The Chihuahuan Desert and Southern Rocky Mountains also influence the Monument. This area is characterized by mountain ranges that generally trend north-south and northwest-southeast, with intervening desert plains. Desert mountain ridges in the Monument are commonly steep, rugged, rocky, and often surrounded by alluvial fans or foothills (BLM 2022a). Mountain ranges are generally a mix of volcanic and intrusive granitic rock, sedimentary layers, and granitic plutonic rocks. Desert grasslands and arid shrublands are the predominant vegetation cover, along with oak, juniper, and piñon pine in some higher elevations.

The city of Las Cruces has a relatively high-density population, and visitors tend to be highly sensitive and generally have concern for protecting scenic views (BLM 2022a). Residential dwellings surrounding the planning area are considered to be of high viewer sensitivity due to a high level of concern related to viewshed among residents and longer duration of views by residents. Areas of urban growth could be considered high sensitivity where residential development occurs; however, some urban land uses (for example, commercial or industrial) are not as visually sensitive due to a lower level of viewer concern, shorter duration of time spent there, and moderate or low public interest.

Views from highly traveled roads, such as Interstate 10 and Interstate 25 within Doña Ana County, are of moderate sensitivity because of their proximity to scenic areas within the planning area. Viewing durations along roadways are reduced compared with residential viewing duration; therefore, a lower viewer sensitivity level is assigned.

Recreational sightseers are also considered highly sensitive due to their interest in views and scenery within the decision area. Various recreational areas exist in the Monument, including the Organ/Franklin Mountains SRMA, which contains the Dripping Springs Natural Area and Aguirre Spring National Recreation Area; Doña Ana Mountains SRMA; Picacho Peak Recreation Area; Soledad Canyon Day Use Area; and various hiking, equestrian, recreation, and mountain biking trails. There are also several national recreation trails in the Monument. For further discussion about recreation opportunities in the Monument, see **Section 3.16**, Recreation.

Smaller cultural modifications (for example, fences, canals, and watering tanks) are noticeable in the foreground, but are either imperceptible or defined only by subtle lines or forms in the middle and distant landscape (that is, background and seldom-seen zones). Larger cultural modifications in the planning area (such as roads and highways, communication facilities, pipelines and transmission lines, and developed recreation areas) appear more noticeable at all viewing distances, depending on terrain and openness of some areas.

The Monument and surrounding BLM-administered lands and communities have seen an increase in activity (for example, visitation, interest, and population) since the Monument's designation in 2014. Improvements, such as paving access roads, have also contributed to the increase in outdoor recreation participation (BLM 2022a).

Increased population surrounding the planning area (see **Section 3.21**, Social and Economic Conditions) has influenced, and is likely to continue to influence, visual resources on BLM-administered lands pressured by urban growth. Urban interface issues are becoming more pronounced as (1) visible areas are impacted by urban influences such as littering and dumping, and (2) residential areas and travelers along roads within and adjacent to the Monument have increased. Trends toward changing landscape character and scenic quality within some portions of the planning area are not as pronounced as those in the surrounding areas because of the enhanced manageability of public land designated as large blocks (BLM 2022a).

New viewpoints of high sensitivity are increasing as the population increases and adds more sensitive viewers to both residential areas and local roads of importance to outlying areas nearer to the planning area. Viewpoints of high sensitivity also increase as visitation intensifies within the planning area, including visitation to areas of interest and traffic volumes on Interstate 10, Interstate 25, and local roads of importance. Although the Monument provides a wide variety of developed and dispersed recreation opportunities, the Organ Mountains and Doña Ana Mountains units receive the majority of visitation, with popular developed sites such as Dripping Springs Natural Area, Aguirre Spring National Recreation Area, Aguirre Spring Campground, and Soledad Canyon Day Use Area. These areas have seen a considerable increase in use since 2019. There has been a general trend of increasing viewer sensitivity after the Monument's designation in some parts of the planning area. Residential viewers adjacent to the Monument have increased; therefore, a trend in sensitive viewers surrounding the Monument has resulted from the population expansion (BLM 2022a).

The BLM established the Afton Solar Energy Zone (SEZ) with issue of the 2012 Record of Decision for the Solar Programmatic Environmental Impact Statement. The SEZ is 29,964 acres designated by the BLM for solar energy development and located approximately 5 miles northeast of the Potrillo Mountains unit and south of Interstate 10. The land within the SEZ is undeveloped scrubland characteristic of a semiarid basin. Vegetation within the SEZ is predominately creosote bush, mesquite, and other low shrubs. Dirt and gravel roads, existing transmission towers, pipeline, and cleared ROWs are within the SEZ (BLM 2022a).

Additional information is available in Sections 2.1.13 and 3.12, Visual Resources, of the AMS (BLM 2022a).

Table 3-49 and **Table 3-50** identify Visual Resource Inventory (VRI) and VRM classes on BLM-administered lands in the planning area. VRI classes are shown in **Figure 3-12**, Visual Resource Inventory in the Monument.

Table 3-49
BLM Visual Resource Inventory Classes

VRI Class	Acres
I	239,596
II	119,698
III	112,584
IV	24,710
Total	496,589

Source: BLM GIS 2022

Table 3-50
BLM Visual Resource Management Classes

VRM Class	Acres
I	241,070
II	41,099
III	25,735
IV	188,522
Total	496,426

Source: BLM GIS 2022

The BLM VRM system has identified areas of BLM-administered land that contain important visual values, and it manages those areas to maintain these values. The BLM manages the following areas as VRM Class I (see Figure 2.52, Visual Resource Management, in the AMS [BLM 2022a]): ACECs, including the Doña Ana Mountains, Robledo Mountains, and the mountainous portions of the Organ/Franklin Mountains ACEC; the Aden Lava Flow RNA; and wilderness areas. The BLM manages the following areas as VRM Class II: some non-mountainous portions of the Organ/Franklin Mountains ACEC, the section of Butterfield Overland NHT through the Monument, and Kilbourne Hole NNL. Under VRM Classes III and IV, the BLM manages additional non-mountainous portions of the Organ/Franklin Mountains ACEC.

Additional information is available in Sections 2.1.13 and 3.12, Visual Resources, of the AMS (BLM 2022a).

3.14.3 Environmental Consequences

The analysis area for visual resources is BLM-administered lands in the planning area. The VRI classes form the basis for the analysis in this section. Although VRI classes use the same numerical scale (Class I through Class IV) as VRM classes, they are defined differently. VRI classes are the categories the BLM uses to classify the visual character of the landscape and are a way to communicate the degree of visual quality in the area. Generally, VRI Class I indicates high visual quality, and VRI Class IV indicates lower visual quality. For more information on the VRI process, refer to BLM Handbook H-8410-1, Visual Resource Inventory (BLM 2003).

The BLM uses VRI classes to identify the relative importance of different landscapes in the area. Potential impacts on visual resources are assessed by comparing the VRI class to the VRM class assigned for an area for each alternative. **Table 3-5 I**, below, lists how the BLM would manage visual resources for each VRI class for the alternatives.

**Table 3-5 I
VRM For Visual Resources by Alternative**

VRM Class	VRI Class I	VRI Class II	VRI Class III	VRI Class IV	Total
Alternative A Acres					
I	239,596	1,129	187	157	241,070
II	0	28,614	12,036	449	41,099
III	0	21,637	3,204	894	25,734
IV	0	68,224	97,217	23,081	188,522
Total	239,596	119,604	112,644	24,581	496,425
Alternatives B, C, and D Acres					
I	239,596	1,325	3,133	68	244,122
II	0	118,373	109,451	24,642	252,467
III	0	0	0	0	0
IV	0	0	0	0	0
Total	239,596	119,698	112,584	24,710	496,589

Source: BLM GIS 2022

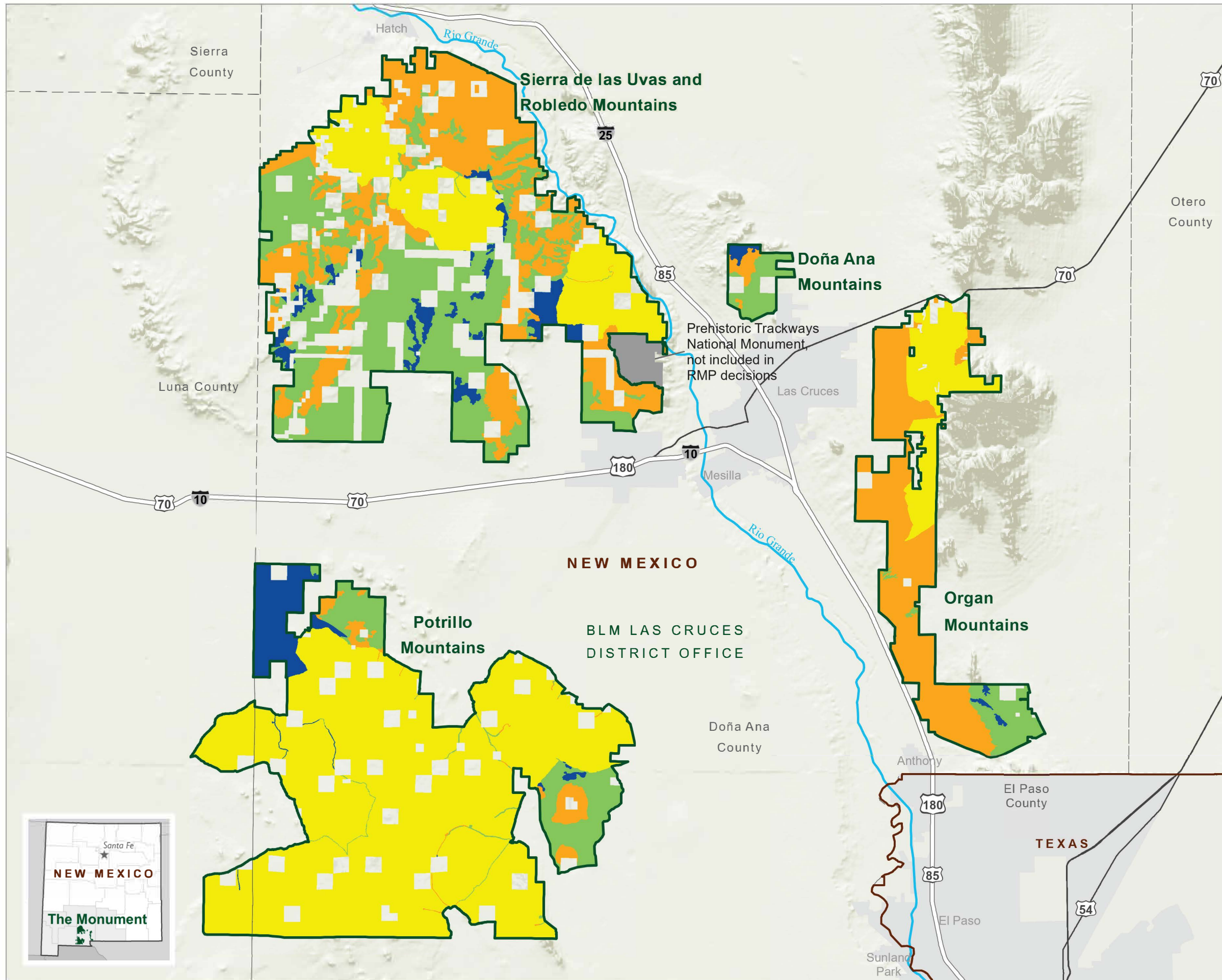
Lands classified as VRI Class IV are landscapes with low visual value. This is generally due to a combination of their low scenic quality, low public sensitivity, and visibility. Managing these landscapes as VRM Class IV would allow for modifications that result in high changes to the scenic quality. By managing these landscapes as VRM Class I, II, or III, the scenic quality of the landscape would likely remain unchanged. In other words, scenic quality would be maintained when an area with a high VRI class number is assigned a lower VRM class number (for example, VRI Class III managed as VRM Class II).

Conversely, lands classified as VRI Class I represent landscapes with high visual value. This is the result of a landscape having higher visual variety leading to a higher scenic quality rating. These landscapes commonly have a higher public sensitivity rating. As such, lands classified as VRI Class I have the potential to experience changes to the scenic quality from being designated as VRM Class II, III or IV. In other words, scenic quality may not be maintained when an area with a low VRI class number is assigned a higher VRM class number (for example, VRI Class II managed as VRM Class III).



**Figure 3-12
Visual Resource Inventory in the
Monument**

- VRI class I
- VRI class II
- VRI class III
- VRI class IV
- Organ Mountains-Desert Peaks National Monument



Otero County

Luna County

Las Cruces

Mesilla

NEW MEXICO

BLM LAS CRUCES
DISTRICT OFFICE

Doña Ana County

Anthony

El Paso County

TEXAS

El Paso

Sunland Park



Source: BLM GIS 2022
Department of the Interior, Bureau of Land Management, Las Cruces District Office
November 13, 2023, OrganMtnsRMP_AE_resources_VRI.mxd
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
GRS 1980 Spheroid, NAD83 Datum

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Issue 1: How would VRM class allocations affect visual values (including scenic quality) on BLM-administered lands?

Summary of Analytical Methods

The acres of the VRM classes were compared with existing conditions, which are based on VRI classes (see **Table 3-51**). This comparison was conducted for each alternative for the 496,529 acres of BLM-administered lands in the decision area. The impacts on visual resources from this comparison would occur over the life of the plan.

Indicators

- VRM class designation in comparison with VRI class

Assumptions

- Activities that cause the most contrast and are the most noticeable to the viewer will have the greatest impact on scenic quality.
- As the acreage of disturbance increases, the degree of visual contrast may also increase.
- The more protection that is associated with the management of other resources and special designations, the greater the benefit to visual resources.
- Best management practices and project design, avoidance, or mitigation can reduce, but not entirely prevent, impacts on visual resources.
- The BLM VRM system's visual resource contrast rating process (BLM Handbook H-8431-1) will be used for site-specific actions. This would not apply to the no action alternative.

Alternative A (No Action Alternative)

Table 3-51 lists how the BLM would continue to manage visual resources under Alternative A. The BLM would continue to manage VRI Class I lands (239,596 acres) under VRM Class I, and there would continue to be very low change to the characteristic landscape.

Under Alternative A, there would continue to be 89,861 VRI Class II acres managed under VRM Class III and IV. Because the BLM would manage these acres under VRM Class III and IV rather than VRM Class II, this designation would potentially allow the visual quality of VRI Class II acres to degrade. This is because the level of change to the characteristic landscape should be low for VRM Class II lands, but the level of change can be moderate and high for VRM Class III and IV, respectively.

Alternative A would continue to have 97,217 VRI Class III acres managed under VRM Class IV. Because the BLM would manage these acres under VRM Class IV rather than VRM Class III, the designation would potentially allow the visual quality of VRI Class III acres to degrade. This is because the level of change to the characteristic landscape should be moderate for VRM Class III lands, while the level of change can be high for VRM Class IV lands.

The visual quality of all VRI Class IV lands would continue to be maintained under all alternatives; however, the BLM would not manage all VRI Class IV lands (24,581 acres) as VRM Class IV. Alternative A would manage VRI Class IV lands with designations of VRM Class I (157 acres), Class II (449 acres), Class III (894 acres), and Class IV (23,081 acres). This would maintain the quality of all VRI Class IV lands by allowing low, moderate, and high changes to the characteristic landscape, respectively.

Alternatives B, C, and D

VRI Class I

Table 3-51 lists how the BLM would manage visual resources under Alternatives B, C, and D. Under Alternatives B, C, and D, the impacts on VRI Class I lands would be the same as those described above under Alternative A.

VRI Classes II, III, and IV

The visual quality of all VRI Class II, III, and IV lands would be maintained under all action alternatives because all these lands would be managed as VRM Class I or II. This would maintain the quality of all VRI Class IV lands by allowing very low (Class I) or low (Class II) changes to the characteristic landscape. Compared with Alternative A, all action alternatives would increase the number of acres where the quality of VRI Class II acres would be maintained, and there are no areas where the visual quality would be potentially allowed to degrade.

Cumulative Impacts

The analysis area for cumulative impacts on visual resources is BLM-administered lands in the planning area. Past, present, and reasonably foreseeable future actions and conditions in this area that have affected and would likely continue to affect visual resources are wildfires, land use authorization and access, livestock grazing, recreation, and vegetation management.

Naturally occurring events, such as wildfire, can alter the landscape with effects on visual resources in the planning area. Many of these actions and events have altered vegetation and landforms and have introduced artificial elements into the natural landscape. Some past developments are being reclaimed, and visual impacts are lessening, but not as fast as new developments are happening.

The BLM's VRI provides the BLM with a means for determining visual values. In the VRI, cultural modifications are any human-caused change in the landform, water form, or vegetation or the addition of a structure that creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape. Although the acres of cultural modifications are not available, Figure 8 in the VRI depicts the locations of cultural modifications (BLM GIS 2022). Agricultural land uses are the most prominent cultural modifications.

Urbanization is expected to continue to result in residential and commercial development expanding incrementally closer to BLM-administered lands. Development of the lands in the vicinity could increase visitors and recreationalists, generally leading to more surface disturbance.

Under Alternative A, the BLM could continue to manage visual resources on all BLM-administered lands in the planning area on a case-by-case basis. When combined with the past, present, and reasonably foreseeable future actions or projects described above, Alternative A would have the greatest influence on cumulative impacts on visual resources; this is because 89,861 acres would continue to be managed in a manner that could allow activities that have an increased potential to change the scenic quality in areas with high value (VRI Class II). There are no areas where the visual quality would be potentially allowed to degrade under Alternatives B, C, and D.

3.15 LIVESTOCK GRAZING

3.15.1 Key Points

- Rangelands will be managed efficiently through careful allotment management to avoid conflicts with other resources.
- Management will aim to decrease impacts that disturb surface areas of rangeland.

3.15.2 Affected Environment

The BLM administers the grazing allotments in the Monument under Section 3 of the Taylor Grazing Act of 1934. Grazing allotments in the planning area may contain BLM-administered land, state trust land, and privately held or managed lands. The BLM authorizes livestock grazing on BLM-administered land on approximately 492,062 acres in the planning area. Approximately 4,529 acres are unavailable for standard term livestock grazing. There are 38 total permits issued by the Monument staff within or overlapping the planning area.

Currently, the LCDO authorizes 85,874 AUMs within the planning area. Of these AUMs, 84,943 are active and 931 are suspended. An AUM is the amount of forage necessary for the sustenance of one cow or its equivalent for a period of 1 month (43 CFR 4100.0-5). Based on the AUMs, the BLM has issued permits to authorize grazing for 9,323 cow/calf pairs and 55 horses on these allotments. Two allotments, Altamira and Picacho Peak, are permitted and billed to Prehistoric Trackways National Monument; approximately 14,021 acres of these allotments overlap the Organ Mountains-Desert Peaks National Monument. For the total 38 allotments, the boundaries of seven overlap both Luna and Doña Ana Counties. The Monument staff is responsible for the administration of livestock grazing on all the allotments, including those overlapping public land outside the planning area boundary. Limited unauthorized livestock grazing from trespass cattle and horses originating from private properties occurs infrequently on these and neighboring allotments.

In the 1980s, the BLM developed classification criteria to assist field offices in identifying management priorities by allotment. Allotments are placed in one of three categories—Maintain, Improve, or Custodial—based on the criteria shown in **Table 3-52** (BLM 1993).

Allotment categories enable the BLM to direct attention to those areas in greatest need to improve a resource or to resolve serious resource-use conflicts. In the Monument, 13 allotments are in the M category, 22 allotments are in the I category, and 3 allotments are in the C category. Two of the allotments under the I category, Altamira and Picacho Peak, are permitted and billed to the Prehistoric Trackways National Monument.

Weather extremes, such as the increase in frost-free days, changes in the timing or amount of precipitation, warmer summers, and the increased potential for wildland fire, are increasingly cited as a growing trend and the result of global climate change. If climate extremes continue or worsen, the sudden shift in climatic patterns associated with these extremes may affect vegetation in ways that are difficult to forecast. These climatic effects can cause a reduction in forage availability and native plant communities. Range improvement projects have identified “fragile land areas” in previous planning efforts. These areas have critical soils on 0 to 10 percent slopes and are the first priority for land treatments and grazing management to reduce erosion and improve water quality.

Additional information is available in Sections 2.2.1 and 3.13, Livestock Grazing, of the AMS (BLM 2022a).

**Table 3-52
Allotment Categories**

Maintain (M)	Improve (I)	Custodial (C)
<ul style="list-style-type: none"> - The present range condition is satisfactory - Allotments have moderate to high resource production potential, and they are producing near their potential (or the trend is moving in that direction) - No serious resource-use conflicts or controversies exist - Opportunities may exist for a positive economic return from public investment - Present management appears satisfactory - Other local criteria 	<ul style="list-style-type: none"> - The present range condition is unsatisfactory - Allotments have a moderate or high resource production potential, and they are producing at low to moderate levels - Serious resource-use conflicts and/or controversies exist - Opportunities exist for a positive economic return for public investment - Present management appears unsatisfactory - Other local criteria 	<ul style="list-style-type: none"> - The present range condition is not a factor - Allotments have a low resource production potential, and they are producing at low to moderate levels - Limited resource-use conflicts and/or controversies may exist - Opportunities for a positive economic return on public investments do not exist or are constrained by technological or economic factors - Opportunities exist to achieve the allotments' potential through changes in management - Other local criteria

Source: BLM 1993

3.15.3 Environmental Consequences

Issue 1: How would proposed management activities impact the number of allotments available for livestock grazing, the associated acres of BLM-administered lands, and the AUMs of forage allocated for livestock grazing?

Summary of Analytical Methods

The best available scientific literature and GIS data were reviewed and analyzed to summarize the following section. The project area described in this section is the area within the Monument and the allotment areas that overlap it. The analysis covers from the time of the RMP's implementation through the life of the plan.

Indicators

- Acres available for livestock grazing
- Change in surface disturbance and available forage

Assumptions

- Livestock will be managed so that range conditions move toward desired conditions.
- Grazing allotments will remain open, if there continues to be demand. If a permittee is willing to relinquish their grazing preference for an allotment, the allotment could move to vacant status, and the permit could be terminated. The decision to change the existing status of an allotment and terminate a permit may be based on the demand for permitted use and utilization of forage or the dedication of the land to another purpose.
- There may be minor, but acceptable, discrepancies between the actual acres of allotments in the Monument and the GIS layers used to determine the extent of those allotments.
- Unauthorized use of rangeland will be minimal to nonexistent.

- Surface-disturbing activities for campgrounds and recreation sites would remove all vegetation for grazing.
- The BLM assumes it would take approximately two growing seasons after a prescribed burn for vegetation to rehabilitate to a level that grazing could be started again. Monitoring would determine the time frame.

Impacts Common to All Alternatives

Under all alternatives, the BLM would continue to manage BLM-administered allotments under the M, I, and C categories (see **Table 3-52**). Monitoring would be conducted at a higher intensity on category I allotments than on categories M and C, to improve range conditions and rangeland health.

To leverage resources and improve management flexibility in livestock grazing, the BLM would continue to partner with permittees, the Natural Resource Conservation Service, local and state governments, and others under all alternatives. This would reduce surface disturbance and improve rangeland health and conditions.

Acres available for livestock grazing would be the same across all alternatives and would not change from the 492,062 acres that are currently available; therefore, there would be no impacts on livestock grazing from the acres available or unavailable to livestock grazing. Areas that are currently unavailable to livestock grazing, like the Dripping Springs Natural Area, would remain unavailable under all alternatives.

Alternative A (No Action Alternative)

Under Alternative A, management would continue under the 1993 Mimbres RMP. The Mimbres RMP called for rangelands to be managed efficiently through careful planning and AMPs, with priority given to special management areas, riparian zones, and fragile land areas. These areas are more prone to surface disturbance and resource conflicts. All management under Alternative A would not jeopardize wildlife population goals or reduce livestock numbers.

Under Alternative A, grazing domestic sheep and goats would be allowed, but prohibited in areas occupied by, or areas with the potential to be occupied by, bighorn sheep that have been designated by the NMDGF.

The BLM would continue to consult with the New Mexico SHPO and Tribes to learn about any new ground-disturbing activities that have the potential to impact livestock grazing.

Action Alternatives (Alternatives B through D)

Under the action alternatives, rangelands would be managed efficiently and flexibly. AMPs would give priority management to special designations, riparian areas, and springs and seeps due to possible resource conflicts. Areas with soils on slopes of more than 10 percent would also be given a priority for grazing management to reduce erosion and improve water quality (see **Section 3.8**, Soil Resources and **Section 3.10**, Water Resources). The BLM would manage livestock grazing to avoid or minimize impacts on cultural and Tribal interests (see **Section 3.13**, Cultural Resources, and **Section 3.20**, Tribal Interests). To do this, the BLM would continue to involve the New Mexico SHPO and consult Tribes, which have the potential to limit livestock grazing or close grazing lands because of sensitive cultural resources.

The BLM would also manage livestock to minimize impacts with recreational users. Measures could include fencing and gating areas or including information for the public about ways to avoid interactions with

livestock. Any new special designations or recreation areas have the potential to impact livestock through limiting where grazing is allowed or where range improvements are implemented (**Section 3.16, Recreation**). The action alternatives would also utilize and implement range improvements to promote rangeland health and sustainable livestock grazing, while remaining consistent with the multiple-use objective of public land.

The action alternatives would use monitoring data to make appropriate changes in management to meet the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2000). This would improve rangeland health over the long term. However, in the short term, these changes to management would potentially reduce grazing and lower forage availability during the implementation phase.

The BLM would identify and remove unnecessary fencing to allow for increased wildlife habitat connectivity within migration corridors. This could increase wildlife-livestock interactions, which have the potential to increase diseases transferred between them and increase forage availability. Further actions would potentially be needed to decrease the transfer of diseases between wildlife and domestic sheep and goats, where grazing is allowed (see **Section 3.2, Fish and Wildlife Habitat**, for more information). While there are currently no sheep grazed in the Monument, to avoid the possibility of domestic sheep and big horn sheep interactions in the future, the BLM would prohibit the grazing of domestic sheep and goats under Alternatives B and C. This would lower potential impacts on big horn sheep from domestic livestock, compared with under Alternative A. Alternative D would allow for domestic sheep and goats to graze in areas that are currently not occupied by big horn sheep, as seen under Alternative A.

Cumulative Impacts

The cumulative impacts analysis area is the planning area and the allotments that overlap with it during the life of the plan. There is one project in the reasonably foreseeable future that will have a direct impact on livestock grazing. In the fiscal year 2025, the BLM plans to replace the cattle guards in the Dripping Springs Natural Area. This will cumulatively decrease the potential for livestock escapes under all alternatives.

The other projects in the area that will improve recreation and visitor use, like maintenance to parking lots, toilet facilities, and trail accessibility, will likely cause an increase in recreational use under all alternatives and therefore an increase in potential livestock-recreationist interactions. Increased recreational use also could increase vegetation trampling and surface disturbance. Increased visitor use also increases the potential for gates to be left open, fences to be cut, and human-livestock interactions, such as camping near water sources. However, it would have little impact on the number of acres available for livestock grazing.

3.16 RECREATION

3.16.1 Key Points

- Under all alternatives, recreational use in the Monument would be managed under various SRMA designations.
- Alternatives B and C would increase the amount of primitive and quiet recreation opportunities, such as pedestrian uses, wildlife viewing, and equestrian use; however, motorized recreation opportunities would decrease due to additional closures to motorized travel (54 percent of the Monument under Alternative B and 52 percent under Alternative C, compared with 49 percent

under Alternative A). Alternative D, which would close 48 percent of the Monument to motorized travel, would increase motorized recreation opportunities compared with Alternative A.

- Restricting camping to 2 days at the Sierra Vista and Baylor Canyon trailheads under Alternative D would result in shorter stays at the Monument and allow more people to camp at these popular locations due to increased turnover. Prohibiting camping at the trailheads under Alternative B would result in increased demand to camp in other locations in or adjacent to the Monument. Under Alternative C, designation of areas open to overnight camping during implementation-level planning would allow for further site-specific examination of recreational needs to meet the demands for camping opportunities while maintaining public safety.
- Compared with Alternative A, the action alternatives would restrict recreational shooting in popular recreation areas and trailheads with the highest concentrations of visitors in the Monument. Of all the action alternatives, opportunities for recreational shooting would be greatest under Alternative D, but still reduced compared with under Alternative A.
- Subsequent implementation-level recreation planning would further enhance user experiences and reduce conflicts under all alternatives.

3.16.2 Affected Environment

Recreation opportunities in the planning area are abundant (see **Figure 3-13**, Recreation Opportunities in the Monument). In addition to being a place where residents recreate, the Monument is a popular regional recreation destination. Visitation in the Monument did not vary much between 2017 and 2019, staying between 415,690 and 493,967 total visits; however, visitation dropped significantly to 296,603 in 2020 before rising to 662,445 in 2021. Visitor days followed the same trend, hitting 1,295,628 in 2021. These recent trends likely reflect an initial reduction of visitation in 2020 due to the outbreak of the COVID-19 pandemic, followed by a large increase in visitation following the increased interest in recreational use as the pandemic continued (BLM 2021a).

Recreation opportunities in all Monument units are similar, with some areas more heavily used due to a specific landmark or recreational use (see Table 2.45, Recreational Opportunities in the Monument, and Figure 2.56, Recreation Opportunities in the Monument, in the AMS [BLM 2022a]). The Organ Mountains and Doña Ana Mountains units receive most of the visitation, with the highest level of concentrated use at Dripping Springs Natural Area, Sierra Vista Trail, and Soledad Canyon (BLM 2021a).

The recreation settings in the Monument range from areas with dispersed, primitive, and undisturbed characteristics in remote locations to developed and easily accessible natural areas near metropolitan areas. Recreation is mostly dispersed and developed where visitors participate individually or in small groups. Dispersed recreation includes OHV activity, mountain biking, day hiking, backpacking, bike-packing, rock climbing, bouldering, horseback riding, trail running, camping, bouldering, hunting, wildlife viewing, sightseeing, photography, and other outdoor activities. Not all activities are allowed in every Monument unit. Recent visitor survey data at the Monument (BLM 2021d) indicate that the activities with the highest participation rates include hiking and walking (78 percent), biking (29 percent), sightseeing (21 percent), and bird-watching (13 percent). Of the 165 survey respondents, 95 percent reported residency in Doña Ana County, with 5 percent traveling from other parts of New Mexico. Another popular recreational activity on the Monument is traveling by bike or foot on the Monumental Loop. This informal approximately 250-mile route identified by recreational users traverses the Monument on trails and existing dirt roads. Recreational use of this loop is expected to continue.

Most visitors to the Monument do not stay overnight. Approximately 3 percent of survey respondents visited the Monument for camping. Dispersed camping opportunities are available throughout the Monument. Dispersed camping is limited to 14 days. Camping at the Sierra Vista and Baylor Canyon trailheads creates conflicts with day users due to the limited availability of trailhead parking.

Based on recent visitor survey data, 1 percent of Monument visitors participated in riding and driving on OHVs. Most OHV use within the planning area occurs near population centers, such as Las Cruces and Doña Ana. There are two OHV areas near the Potrillo Mountains and Doña Ana Mountains planning units: the Aden Hills OHV Area and Red Sands OHV Area. Both are open to motorcycles, UTVs, ATVs, and four-wheel-drive vehicles (BLM 2021b). These areas are outside the Monument but are managed by the LCDO.

Based on recent visitor survey data, 1 percent of Monument visitors participated in hunting. There are several hunting opportunities within Doña Ana County. These include hunting for small game and birds (waterfowl and upland game species), such as ducks, geese, doves, and quails, as well as big game species, including desert bighorn sheep, mule deer, and pronghorn. In some areas of the Monument, such as around the crater at Kilbourne Hole NNL, recreational shooting leads to conflicts with other recreational users. This is a result of spent shells and increased traffic interfering with primitive recreational experiences. Additionally, shooting in the vicinity of heavily trafficked recreation sites creates a safety hazard for recreational users.

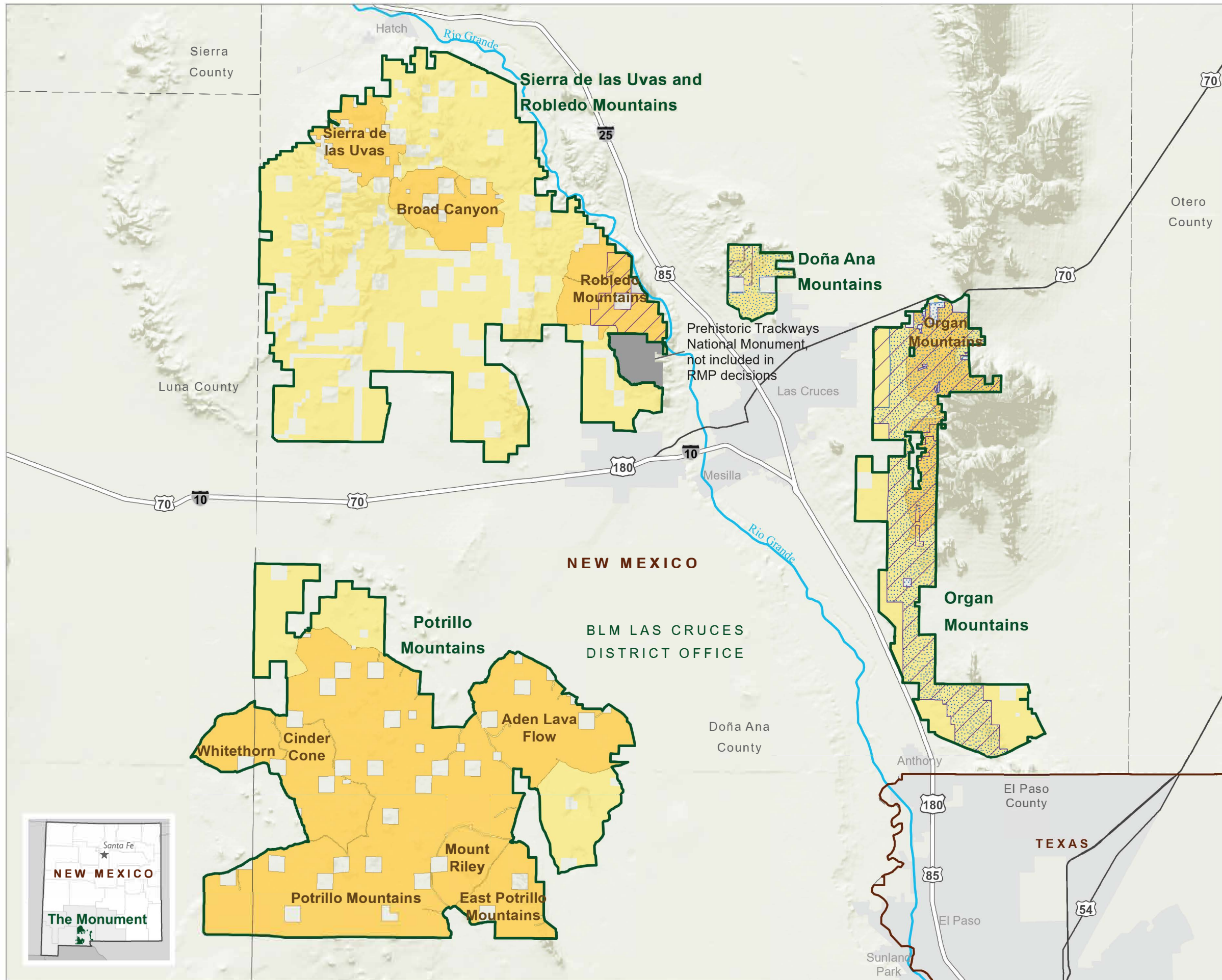
Direction for managing recreation uses in the Monument is currently established in the Mimbres RMP (BLM 1993), as amended. Since the Monument's designation, visitation and subsequent revenues for Aguirre Spring National Recreation Area and Dripping Springs Natural Area developed recreation sites have steadily increased (see Table 2.46, Visitor Use and Revenue Data for Aguirre Spring Recreation Area and Dripping Springs Natural Area in the AMS; BLM 2022a). Throughout the Monument, there has been a considerable increase in recreation use since the Monument was designated in 2014. For example, between 2014 and 2019, the number of visitor days increased at Dripping Springs from approximately 23,000 to over 115,000. The BLM anticipates further increases in recreation demand in the future (BLM 2023c).

Special Recreation Management Areas






The BLM has designated two SRMAs within the Organ Mountains and Doña Ana Mountains units—the Organ/Franklin Mountains SRMA (52,240 acres) and the Doña Ana Mountains SRMA (7,384 acres), respectively.

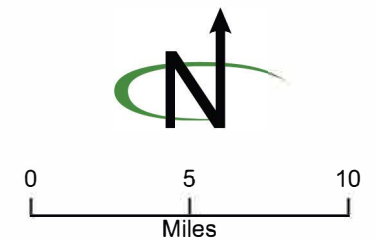
Organ/Franklin Mountains SRMA

The Organ/Franklin Mountains SRMA includes the two developed recreation areas (the Aguirre Spring National Recreation Area and the Dripping Springs Natural Area) as well as various other hiking trails and primitive recreation opportunities. The Organ/Franklin Mountains SRMA is the only area that has developed recreation facilities, with associated fees for use of picnicking sites, camping areas, and trailheads.



**Figure 3-13
Recreation Opportunities in the
Monument**

-  Special recreation management area
-  Area of critical environmental concern
-  Wilderness
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 April 18, 2023, OrganMtnsRMP_AE_resourceUses_Recreation.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

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The Dripping Springs Natural Area is a day use area that houses the A. B. Cox Visitor Center, La Cueva Picnic Area, and 5 miles of trails that are part of the National Recreation Trail (NRT) System as the Dripping Springs NRT, described below under *National Recreation Trails*. The Aguirre Spring National Recreation Area includes a developed campground that offers visitors 57 camping/picnicking areas with basic amenities such as water, toilets, and fire rings. The Baylor Pass and the Pine Tree NRTs start at the Aguirre Spring National Recreation Area to comprise the Organ Mountain NRT. These trails, along with the 29-mile-long Sierra Vista NRT, are also described below under *National Recreation Trails*.

The BLM acquired the Soledad Canyon Day Use Area in 2001 with the intent to keep it in as natural a setting as possible, while providing for trail hiking, nature study, and equestrian uses.

The La Cueva Picnic Area includes 23 picnicking sites and one group site that offers visitors shaded picnic tables, grills, and pit toilets. The area does not provide for hunting activities.

The Doña Ana Mountains SRMA

The Doña Ana Mountains SRMA is north of Las Cruces near the southeastern portion of the New Mexico State University Rangeland Research Center. The SRMA boundary includes and extends beyond the Doña Ana Mountains ACEC boundary. The ACEC is managed for protection of the biological, scenic, and cultural values; however, recreation occurs across the SRMA, including the areas within the ACEC. Recreation opportunities include mountain biking (in particular), trail running, hiking, OHV use, recreational shooting, equestrian use, rock climbing, and dispersed camping (BLM 2022a). There are presently conflicts among certain recreational activities, particularly mountain biking, recreational shooting, and OHV use.

These uses in the Doña Ana Mountains SRMA have increased considerably since the Mimbres RMP (BLM 1993) and even more so following designation of the Monument in 2014. Since the Monument's designation, the Doña Ana Mountains SRMA has seen significant increases in all the recreation opportunities, and the BLM expects this trend to continue in the future (BLM 2022a). The Doña Ana Mountains SRMA is commonly associated with mountain biking, which has seen significant growth in use over recent years. Furthermore, areas around the Doña Ana Mountains have seen significant residential growth in recent years, which has led to increases in recreation use.

Special Recreation Permits

The BLM issues special recreation permits (SRPs) to manage visitor use, protect natural and cultural resources, and accommodate commercial recreation uses. SRPs may be issued for 5 years or less with an annual renewal. The BLM issues commercial SRPs to outfitters, guides, vendors, recreation clubs, and commercial competitive event organizers providing recreation opportunities or services without employing permanent facilities. SRPs for organized group events are also included in this category. Competitive and commercial SRPs are demand driven, and the number of active permits fluctuates annually. Due to the limited availability of SRPs issued in the planning area, the demand for SRPs is not expected to dramatically increase. However, as the Monument continues to increase in popularity, local user groups, individuals, and national outdoor recreation entities have expressed interest in hosting competitive events and commercial tours in the Monument.

Other Areas

Sierra de las Uvas and Robledo Mountains Unit

The Monument's largest unit offers a wide variety of dispersed recreation opportunities for visitors, including, but not limited to, hunting, hiking, biking, dispersed camping, and four-wheel-drive vehicle use. Visitation data are limited, but trends point toward increasing recreation in the future. The Picacho Peak recreation area includes Picacho Peak, a 4,959-foot-high peak just northwest of Las Cruces. The recreation area has more than 15 miles of mountain biking, hiking, and equestrian trails.

Potrillo Mountains Unit

Bike-packing, hunting, hiking, and bird-watching are the most prominent recreation activities in the Potrillo Mountains unit. There is a strong emphasis on the area's remote, rugged, and natural character. Kilbourne Hole NNL and Aden Lava Flow RNA are the most popular areas in the unit (Casey et al. 2018). The NNL and RNA, along with ACECs and designated wilderness areas, are discussed further in **Section 3.19**, Special Designations.

National Recreation Trails

The BLM manages four NRTs within the planning area: the Organ Mountains Trail–Pine Tree NRT, Organ Mountains Trail–Baylor Pass NRT, Dripping Springs NRT, and Sierra Vista NRT (NRT 2021). These NRTs make up approximately 43 miles of trails for recreation users and provide visitors with various trail-based recreation opportunities, including walking, hiking, and running. As recreational demand increases, the four NRTs in the area will see continued high use, highlighting the need for efficient maintenance. Each NRT is described below:

- The Sierra Vista NRT is 29 miles long and developed for mountain biking, hiking, and equestrian use (NRT 2021). It is a nonmotorized recreation trail along the western flank of the Organ Mountains and the eastern side of the Franklin Mountains.
- The Organ Mountains NRT includes the Baylor Pass and Pine Tree Trails. The 6-mile Baylor Pass Trail has its eastern end at the Aguirre Spring National Recreation Area campground. This out-and-back trail takes visitors to the Baylor Canyon Road on the west side of the mountains. The 4-mile Pine Tree Trail is a loop that climbs to the base of the Organ Needles, in ponderosa pine habitat. Both trails provide spectacular views of the Organ Mountains and the Tularosa Basin. The Baylor Pass Trail is in the Organ Mountains Wilderness and is open to hiking and equestrian use. The Pine Tree Trail is also in the Organ Mountains Wilderness; it is open to hiking only.
- The Dripping Springs NRT includes the Fillmore, Ice Canyon, and La Cueva Trails. These trails provide hiking access to riparian habitat and historic and prehistoric cultural sites. The Fillmore also provides the approach for climbing destinations in the Needles Formation.

Additional information is available in Sections 2.2.4 and 3.16, Recreation, of the AMS (BLM 2022a).

3.16.3 Environmental Consequences

Issue 1: How would the quality, types, and levels of recreation opportunities be affected by changes in OHV allocations; SRMA designations; and recreational shooting areas?

Summary of Analytical Methods

Changes in recreation opportunities and quality are measured by the changes in acres closed to motorized travel, acres and management of SRMAs, recreational shooting opportunities, and management of camping.

Changes in the quality, types, and levels of recreation and overall recreation opportunities, as well as conflicts between uses, vary by alternative. The spatial analysis area is the decision area. The analysis is for a 20-year time frame or the life of the RMP.

Indicators

- Acres closed to motorized or mechanized travel
- Acres of SRMAs and RMZs
- Acres where recreational shooting is prohibited
- Areas where camping is prohibited or limited

Assumptions

- Current recreation and demand in the planning area will continue and is likely to increase. Technological advancements may introduce new types of recreational activities.
- The potential for user interactions between all types of users will increase with increasing use.
- Demand for all types of recreation will increase, regardless of whether the activity is permitted.
- Increasing access to BLM-administered lands may increase recreational demand in some areas, while also decreasing demand in other areas by dispersing recreation throughout the decision area.
- Revenue generated from recreation will continue to increase in the future.
- Recreation will increase in areas where additional OHV use is allowed.

Impacts Common to All Alternatives

Under all alternatives, recreational use in the Monument would be managed under various SRMA designations. Mountain biking and motorized recreation would be prohibited on the 239,596 acres (48 percent) of the Monument within designated wilderness, where pedestrian and equestrian use and other primitive recreational activities would continue. Under all alternatives, motorized and mechanized recreation would be limited to designated trails in the 52 percent of the Monument outside designated wilderness. As discussed below, additional areas would be closed to motorized recreation, depending on the alternative.

Under all alternatives, all trails created for the passage of vehicles between December 1993 and May 2014 would be considered open, closed, or limited and subject to closure. There would be no open areas for cross-country OHV travel under any alternative.

Designating SRMAs and RMZs would have long-term beneficial effects on the management and protection of specific recreational opportunities and experiences. SRMAs and RMZs set distinct recreation management strategies for identified values and characteristics at discrete locations, resulting in beneficial impacts on recreational use. Recreation planning across BLM-managed surface lands has shifted to an outcomes-focused management framework. Each SRMA and RMZ has specific measurable outcomes, focused objectives, and associated management actions that provide a beneficial impact by guiding the amounts and types of uses allowed. RMZs, which can be included as discrete units within a SRMA, have a distinctive recreation character, provide opportunities for a different experience and benefit outcome, and require a different set of management actions. The RMA frameworks will be developed for each SRMA and RMZ in a future recreation appendix to be developed between the draft and final EIS. These

frameworks will identify the key elements of the proposed RMAs, including targeted recreation activities, experiences, benefits, outcomes, allowable use activities, and management actions associated with each area. Impacts would vary depending on the number and size of the RMAs. The BLM would also designate routes for motorized and mechanized use and identify other specific recreation management in SRMAs during future implementation-level planning, which would further benefit recreation in these RMAs.

Under all alternatives, the number of active SRPs in the Monument would continue to fluctuate from year to year. Competitive and commercial SRPs are demand driven and are also influenced by the Monument Proclamation, the Wilderness Act of 1964, and BLM Handbook 2930-1. The BLM would manage SRPs programmatically within the decision area for both commercial and organized group activities and events under all alternatives. SRPs would continue to reduce the potential for conflicts between SRP holders and other users by helping avoid the potential for unauthorized commercial and group activities to detract from the overall desired experience and setting of other users.

Climate change will alter opportunities and demand for outdoor recreation through altered winter weather conditions and season lengths, climate-driven changes in user preferences, and damage to recreational infrastructure, among other factors. Longer and hotter summers, along with more prevalent drought conditions, would further stress vegetation and soil resources, which could decrease recreation opportunities and experiences. Extreme weather events, such as torrential rainstorms and flash flooding, could damage recreation infrastructure and facilities, reducing future recreation quality and opportunities.

Subsequent implementation-level recreation planning would further enhance user experiences and reduce conflicts under all alternatives.

Alternative A (No Action Alternative)

OHV Travel

Under Alternative A, the BLM would continue to manage 242,889 acres (49 percent of the Monument) as closed to motorized travel in designated wilderness areas and scenic portions of the Organ/Franklin Mountains ACEC; this would prevent opportunities for motorized recreation in these areas. Motorized travel on 253,702 acres in the remaining 51 percent of the Monument would continue to be allowed, but only on designated routes. Opportunities for motorized recreation would continue in these areas subject to future travel management planning.

The Monument would remain closed to the use of unmanned aerial vehicles (UAVs) until implementation-level planning is completed. No opportunities for recreational use of UAVs would exist on the Monument.

SRMAs and RMZs

Recreational use would continue to be concentrated in SRMAs under Alternative A, particularly in the Organ Mountains SRMA because of the existing facilities and user familiarity with the current recreation opportunities.

Under Alternative A, the BLM would continue to manage 7,284 acres as the Doña Ana Mountains SRMA, with specific management to facilitate recreation identified in a future recreation area management plan. Because no differentiated management allocations would be identified for the SRMA under Alternative A, the potential for conflicts between various types of recreational users, such as OHV users, recreational shooters, and hikers, could continue to occur.

The BLM would continue to manage the Organ Mountains SRMA (52,240 acres) under the Organ Mountains Coordinated RMP. Leashed pets would continue to be allowed on designated trails; this would maintain recreational experiences within the SRMA but continue the potential for user conflicts. While no differentiated management allocations would be identified for the SRMA under Alternative A, the current division of the SRMA between the areas within and outside the Organ Mountains Wilderness would provide a natural differentiation between areas managed for a wilderness setting and areas managed for more varied recreational uses, including OHVs. Continued allowance of camping at the Sierra Vista and Baylor Canyon trailheads would provide an opportunity for this type of recreation, but safety concerns from long-term camping would continue to detract from the recreational experience for day users.

Under Alternative A, the Picacho Peak area would be managed with temporary special management, including limiting motorized recreation to designated roads and trails.

Recreational Shooting

Under Alternative A, recreational shooting would continue to be prohibited only within the rim of Kilbourne Hole NNL (5,460 acres; **Appendix A, Figure 2-9**, Alternative A: Public Safety No-Shooting Zones). Opportunities for recreational shooting would continue throughout the rest of the Monument. This would continue to result in the potential for conflicts with other recreational users in the Monument from the presence of spent ammunition, increased traffic and noise, and safety hazards.

Camping

Under Alternative A, opportunities for camping would continue throughout the Monument, including in high-use areas such as the Sierra Vista and Baylor Canyon trailheads. Camping would continue to be concentrated in these high-use areas, with dispersed camping occurring elsewhere in the Monument.

Other Recreational Uses and Facilities

Pedestrian use would continue to be allowed throughout the Monument under Alternative A, except that it would be limited to designated trails only in upper Ice Canyon above the drift fence. Opportunities for pedestrian uses in the Monument would therefore continue to be widespread, though experiences would continue to be affected by conflicting recreational uses, such as OHV travel, use of UAVs, and recreational shooting.

Access

Under Alternative A, access for recreationists would continue to be limited for the Sierra de Las Uvas Wilderness Area and the Picacho Peak recreation area, which would in turn limit recreational use of these areas and create the possibility of conflicts between recreationists and private landowners. Opportunities for recreationists to access the Organ Mountains Wilderness would improve if the BLM acquired legal public access to Achenbach Canyon.

Action Alternatives (Alternatives B through D)

OHV Travel

Throughout the Monument, OHV travel would be limited to designated roads except in areas that are closed to OHV travel. This means that an increase in acres closed to OHV travel would be accompanied by a decrease in acres limited to designated roads in the Monument, and vice-versa. Of all the alternatives, Alternative B would have the highest number of acres closed to OHV travel (54 percent of the Monument,

compared with 49 percent under Alternative A). Closures to OHV travel would reduce motorized recreation opportunities in the Northern Doña Ana Mountains RMZ, Doña Ana Mountains ACEC, Picacho Peak SRMA, and Kilbourne Hole NNL. Of all the alternatives, Alternative C would have the second-highest areas closed to OHV travel (52 percent of the Monument, compared with 49 percent under Alternative A). Closures to OHV travel would reduce motorized recreation opportunities in similar areas to those under Alternative B, except the BLM would allow OHV travel on designated roads in the Doña Ana Mountains ACEC. Management under Alternatives B and C would decrease overall motorized recreation opportunities; however, under Alternatives B and C, opportunities for quiet recreation, such as pedestrian use, would increase compared with under Alternative A.

Of all alternatives, Alternative D would have the fewest areas closed to OHV travel (48 percent of the Monument, compared with 49 percent under Alternative A). Opportunities for OHV travel would increase specifically in the scenic portions of the Organ/Franklin Mountains ACEC, compared with Alternative A, because OHV travel would be allowed on designated roads in this area wherever it does not overlap designated wilderness. However, opportunities for recreation that involve quiet activities, such as wildlife viewing and other pedestrian uses, would decrease in this area compared with Alternative A.

Prohibiting UAV use in the Monument under Alternative B would eliminate any opportunity for recreational use of these vehicles. Future use of UAVs could occur under Alternatives C and D if implementation-level planning identified designated areas for their use. UAV use could degrade primitive recreational experiences due to noise and vehicle presence.

SRMAs and RMZs

Under the action alternatives, the BLM would manage a varying number of acres and areas as SRMAs. Under Alternative B, the BLM would manage 66,348 acres as three SRMAs (6,824 more acres and one additional SRMA, compared with Alternative A). Under Alternative C, the BLM would manage 45,871 acres as three SRMAs (13,653 fewer acres and one additional SRMA, compared with Alternative A). Under Alternative D, the BLM would manage 7,284 acres as one SRMA (52,240 fewer acres and one fewer SRMA, compared with Alternative A). The impacts of these designations on recreation opportunities are described below under each specific SRMA. All action alternatives would establish RMZs; where they are established, the RMZs would reduce potential recreational user conflicts, compared with under Alternative A, which would not establish RMZs.

Doña Ana Mountains SRMA

Management of the Doña Ana Mountains SRMA under the action alternatives would vary in terms of the size of the SRMA and the uses allowed in the Northern Doña Ana Mountains RMZ. Closing the Northern Doña Ana Mountains RMZ to OHV travel under Alternatives B and C would reduce opportunities for motorized recreation while improving opportunities for quiet recreation opportunities, such as wildlife viewing and other pedestrian uses, compared with under Alternative A. This effect would be greater under Alternative B because the RMZ would cover a larger area (4,797 acres) than under Alternative C (3,054 acres).

Recreational target shooting would be prohibited in the Northern Doña Ana Mountains RMZ under Alternative B and allowed in BLM-designated areas only under Alternative C. No specific areas open to recreational shooting are currently identified under Alternative C; therefore, no shooting would be able

to occur. This would reduce opportunities for this use compared with under Alternatives A and D. However, a parcel of up to 40-acres could be designated as open to recreational shooting through future implementation-level planning. In this area, impacts would occur, as described under Alternative A. Allowing OHV travel on designated routes as well as recreational shooting in the Northern Doña Ana Mountains RMZ would maintain motorized and recreational shooting opportunities under Alternative D, while continuing the potential for user conflicts; This would be similar to Alternative A.

Under Alternatives B and C, the BLM would develop a climbing management plan for the entire Doña Ana Mountains SRMA. This would enable the BLM to develop specific management for climbing, which would improve climbing opportunities compared with under Alternatives A and D.

Organ Mountains SRMA

The size of the Organ Mountains SRMA would vary under Alternatives B and C, and the BLM would undesignate the Organ Mountains SRMA under Alternative D. Under Alternatives B and C, the Organ Mountains SRMA would be managed to ensure that wilderness character is preserved and is unimpaired for future use and enjoyment, which would benefit primitive recreation experiences. The primary management change in the SRMA that would affect recreation opportunities relates to camping at Sierra Vista and Baylor Canyon trailheads. Alternatives B and D would both reduce the opportunities for camping at these trailheads, compared with Alternative A. Alternative B would prohibit camping at the trailheads, and Alternative D would limit camping at the trailheads to 2 nights. While camping opportunities would be reduced or eliminated compared with Alternative A, eliminating the associated safety risks associated with long-term camping at the trailheads would improve the recreational experience for other users. Under Alternative C, camping at the trailheads would continue, with the same impacts as under Alternative A. Additionally, Alternative D would limit camping within the Organ Mountains SRMA to 14 days, in accordance with supplementary rules. Compared with the other alternatives, this would limit camping opportunities within the SRMA.

The designation, or lack thereof, of the SRMA overlapping the Organ Mountains Wilderness would not affect recreation opportunities. This is because the restrictions on recreation in wilderness would continue to apply. These include closure to OHV travel and mechanized use. Under all alternatives, recreation opportunities in the Organ Mountains Wilderness would maintain the users' experience of the wilderness setting.

Undesignating the Organ Mountains SRMA under Alternative D would result in similar effects on recreation opportunities as those under Alternatives B and C, other than the previously described camping opportunities. This is because management of the area and the resulting recreation opportunities would otherwise remain the same. However, subsequent implementation-level recreation planning that could be completed for the SRMA for Alternatives A, B, and C would potentially enhance user experiences and reduce user conflicts. This would not occur under Alternative D.

Under Alternative B, the BLM would develop a climbing management plan for the Organ Mountains SRMA. This would enable the BLM to develop specific management for climbing to limit climbing and bouldering within cultural, biological, and geological resource areas. This would benefit these resources, while reducing climbing opportunities compared with the other alternatives.

Picacho Peak SRMA

Impacts on recreation opportunities from management of the Picacho Peak SRMA under Alternatives B and C would be similar to the temporary special management of the area under Alternative A. The exception is that Alternatives B and C would close the area to OHV travel and develop interpretive sites and materials for ROVs within the SRMA. Compared with under Alternative A, these would reduce opportunities for motorized recreation while enhancing opportunities for nonmotorized uses, such as equestrian use, wildlife viewing, and interpretation.

Alternative D would not designate the Picacho Peak SRMA. This would maintain opportunities for motorized recreation experiences, compared with under the other action alternatives. However, not designating the SRMA (Alternatives B and C) or managing the area under temporary special management (Alternative A) would reduce the BLM's ability to protect and enhance recreational activities, experiences, benefits, and desired recreation setting characteristics in this area. Therefore, Alternative D would potentially reduce the quality of recreation and visitor services and increase the potential for user conflicts in this area, compared with Alternatives A, B, and C.

Recreational Shooting

Alternatives B and C would prohibit recreational shooting on 31,156 acres and 29,731 acres of the Monument, respectively (**Appendix A, Figure 2-10**, Alternative B: Public Safety No-Shooting Zones, and **Figure 2-11**, Alternative C: Public Safety No-Shooting Zones). It should be noted that Alternative C would allow recreational shooting in BLM-designated areas only within the Northern Doña Ana Mountains RMZ. Also, while no specific areas are currently open to recreational shooting, 40-acre parcels could be designated as open to recreational shooting through future implementation-level planning. This would adjust the overall acreage prohibited to recreational shooting under Alternative C.

Each of the acreages under Alternatives B and C represents approximately 6 percent of the Monument that would be closed to recreational shooting, compared with 1 percent under Alternative A. The areas where recreational shooting would be prohibited are popular recreation areas and trailheads with the highest concentrations of visitors in the Monument. Of all the action alternatives, opportunities for recreational shooting would be greatest under Alternative D, but still reduced compared with under Alternative A. Under Alternative D, recreational shooting would be prohibited on 26,677 acres (5 percent of the Monument; **Appendix A, Figure 2-12**, Alternative D: Public Safety No-Shooting Zones).

While the action alternatives would reduce opportunities for recreational shooting compared with Alternative A, they would improve public safety and reduce user conflicts in these popular recreation areas within the Monument. Visitors would have the opportunity to engage in recreational shooting on 94 to 95 percent of the Monument, depending on the alternative.

Camping

The primary management change that would affect camping opportunities would occur at the Sierra Vista and Baylor Canyon trailheads. Alternatives B and D would both reduce the opportunities for camping at these trailheads compared with Alternative A. Alternative B would prohibit camping at the trailheads, which would result in increased demand to camp in other locations in or adjacent to the Monument. Dispersed camping also would increase. Alternative D would limit camping to 2 days, which would result in shorter stays at the Monument and allow more people to camp at these popular locations due to increased turnover. Additionally, Alternative D would limit camping within the Organ Mountains SRMA

to 14 days, in accordance with supplementary rules. Long-term campers would seek other opportunities to camp in or adjacent to the Monument; dispersed camping in the Monument may also increase.

Under Alternative C, designation of areas open to overnight camping during implementation-level planning would allow for further site-specific examination of recreational needs to meet the demands for camping opportunities while maintaining public safety. Future implementation-level planning would balance the capacity of designated sites with visitor demand. If demand exceeded the capacity of designated areas, camping would increase on adjacent public lands outside the Monument.

Other Recreational Uses and Facilities

Like Alternative A, pedestrian-use opportunities would continue to be widespread under the action alternatives. Alternatives B and C would have the same impacts on pedestrian-use opportunities as Alternative A, though experiences may be improved due to increased restrictions on OHV travel and recreational shooting. Specifically, closing the Northern Doña Ana Mountains RMZ to OHV travel under Alternatives B and C would improve opportunities for more primitive recreational experiences, such as mountain biking, wildlife viewing, and other pedestrian uses, compared with Alternative A. Prohibiting recreational shooting in the Northern Doña Ana Mountains RMZ under Alternative B and allowing recreational shooting only in BLM-designated areas (there are currently no BLM-designated areas) would also have a similar effect.

The 2018 Monument Outdoor Recreation Survey indicated that those who recreate near the Doña Ana Mountains unit value attainment of experiences related to exercise, solitude, adventure and excitement, and developing skills (Casey et al. 2018). Because mountain biking is a dominant activity around Doña Ana Mountains, the recreational experience may be enhanced for those who value opportunities to develop skills, experience adventure and excitement, and get physical exercise through mountain biking. This effect would be greater under Alternative B because a larger area would be closed, compared with under Alternative C.

Reducing camping opportunities at the Sierra Vista and Baylor Canyon trailheads under Alternative D would lessen the safety risks associated with long-term camping at the trailheads and improve the experience for other recreational users, such as hikers. Eliminating camping opportunities at these trailheads under Alternative B would further improve the recreational experience for other users. Under Alternative C, designation of areas open to overnight camping during implementation-level planning would allow for further site-specific examination of recreational needs to meet the demands for camping opportunities while maintaining public safety.

Of all the alternatives, Alternative D would provide the most pedestrian-use opportunities because there would be no restrictions on pedestrian use anywhere on the Monument. However, experiences would be similar to or slightly degraded compared with Alternative A because of the slight increase in opportunities for OHV travel under Alternative D.

Access

Compared with Alternative A, access for recreationists would be improved, and conflicts with private landowners would be reduced, under the action alternatives if the BLM acquired legal public access to the Sierra de Las Uvas Wilderness and the Picacho Peak area. Like under Alternative A, opportunities for recreationists to access the Organ Mountains Wilderness would improve if the BLM acquired legal public

access to Achenbach Canyon. Recreation in all these areas would increase due to these access improvements.

Cumulative Impacts

All alternatives include SRMAs and/or RMZs that identify where BLM would generally prioritize the expenditure of funding and resources for recreation management, though the size of these RMAs varies by alternative. Alternatives B and C would provide more prescriptive SRMA management across the planning area, which may attract certain recreationists to the Monument due to the emphasis of certain uses.

Several recreation facilities would be upgraded, modernized, and improved as part of projects separate from this RMP. Substantial improvements would be made to the Dripping Springs Natural Area, Sierra Vista Trailhead, Cox Visitor Center and Compound, Soledad Canyon Day Use Area, and Aguirre Spring National Recreation Area. Upgrades include the installation of new recreation facilities and upgrades (toilets, visitor center upgrades, amphitheater improvements, and maintenance) and access improvements (parking, road access, and Americans with Disabilities Act compliance). Specific improvements, along with the anticipated timeline, can be found in **Table 3-1**. These improvements are expected to increase travel experiences, opportunities, and access, with associated increases in recreation opportunities, by expanding the necessary infrastructure and facilities that were mentioned in the recreation group study (Casey et al. 2018).

The management considered in the RMP alternatives would contribute to overall cumulative improvements in the recreation experience by avoiding user conflicts and promoting user safety, although opportunities for specific types of recreation, such as recreational shooting, would be reduced under the action alternatives compared with Alternative A. Alternatives B and C would also reduce opportunities for motorized recreation compared with Alternatives A and D, while improving opportunities for other recreational uses. As described under *Action Alternatives (Alternatives B through D)*, above, under Alternatives B, C, and D, future implementation-level planning would balance the capacity of designated camping sites with visitor demand. If demand exceeded the capacity of designated sites, camping would increase on adjacent public lands outside the Monument.

3.17 LANDS, REALTY, AND CADASTRAL SURVEY

3.17.1 Key Points

- Under the proposed RMP and all alternatives, the BLM would continue to prohibit new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objectives, and values, or are mandated by law, per Proclamation 9131. Thus, the number of ROWs would remain static or increase only minimally.

3.17.2 Affected Environment

The BLM lands, realty, and cadastral survey program includes permitting land use authorizations for such uses as utility corridors and other ROWs, and land tenure actions (acquisitions, disposals, exchanges, or withdrawals). Each is discussed below. Additional information is available in Sections 2.2.5 and 3.17, Lands and Realty (tenure, land use authorizations, corridors, and communication), of the AMS (BLM 2022a).

Land Use Authorizations

Land use authorizations on BLM-administered land in the Monument include ROW grants, permits, and leases under several different authorities, including Section 302 of the FLPMA and the Mineral Leasing Act of 1920, as amended (30 USC 185).

The BLM administers 80 ROWs/authorizations that encumber approximately 240.2 miles within the planning area (BLM 2022a). These ROWs were all in existence before the Monument was created under Proclamation 9131. Currently, the vast majority of the ROWs granted by the LCDO are authorized under Title V of FLPMA (43 USC 1761–1771). The existing ROWs include a variety of uses, such as utility (power, telephone, and cable), oil and gas pipelines, water facilities (irrigation or domestic pipelines, wells, ditches, and reservoirs), roads, communications, and other site-specific uses. No renewable energy ROWs are in the planning area.

Four communication sites are within the planning area, which include five individual site ROWs. There are two established communication site management plans within the planning area.

The BLM established exclusion and avoidance areas to guide decisions about ROW locations. ROW exclusion areas are defined as areas that are not available for ROWs under any conditions. ROW avoidance areas are defined as those on which a ROW should be avoided, if possible, and ROWs may be subject to conditions in order to be granted (Figure 2.59, Rights-of-Way and Avoid/Exclude Areas in the Planning Area, in the AMS [BLM 2022a]).

The existing condition for avoidance and exclusion areas is as it was on the date of Proclamation 9131; this includes the areas identified in the Mimbres RMP and plan maintenance updates. Approximately 210,152 acres are designated as ROW avoidance areas, and 286,439 acres are designated as ROW exclusion areas.

Land Tenure

Approximately 496,591 acres of BLM-administered lands in the Monument are concentrated mostly in Doña Ana County. The Monument also overlaps two small sections of Luna County in south-central New Mexico. Many isolated parcels of state trust land and private land are dispersed throughout the planning area and interspersed with the public lands (see Table 1.1, Surface ownership in OMDPNM by percentages, in the AMS [BLM 2022a]).

Proclamation 9131 reserved all lands and interests in lands owned or controlled by the US government within the Monument's boundaries; therefore, there are no identified lands for disposal in the Monument. There are two pending acquisitions within the Monument's boundaries and two pending edge-holding acquisitions (see *Issue 1: How would proposed management affect land use authorizations and land tenure in the Monument?*).

The BLM utilizes withdrawals for the purpose of withholding an area of federal land from settlement, sale, location, or entry, under some or all of the general land laws, for the purpose of limiting activities under those laws to maintain other public values in the area; reserving the area for a particular public purpose or program; or transferring jurisdiction over an area of federal land. Under Section 204 of the FLPMA, the BLM has been given the responsibility of reviewing all land classifications and withdrawals on BLM-

administered lands. Pursuant to Proclamation 9131, all federal lands and interest in lands within the Monument's boundaries are withdrawn.

The BLM may exchange public land for lands owned by corporations, individuals, states, local governments, or other entities legally capable of holding title to and conveying land. Except for those exchanges that are congressionally mandated or judicially required, exchanges are voluntary and discretionary transactions with willing landowners. Exchanges serve as a viable tool for the BLM to accomplish its goals and mission. Section 5(c) of the Organ Mountains-Desert Peaks Conservation Act requires the Secretary of the Interior to "attempt to enter into an agreement" with the Commissioner of Public Lands of New Mexico to exchange approximately 11,000 acres of state trust land within the Monument's Desert Peaks area to the BLM and an unspecified acreage of BLM-administered lands to the State.

Additional information is available in Sections 2.2.5 and 3.17, Lands and Realty (tenure, land use authorizations, corridors, and communication), of the AMS (BLM 2022a).

3.17.3 Environmental Consequences

Issue 1: What would be the impact on ROWs, ROW exclusion and avoidance areas, and areas available for acquisition, retention, and disposal in the Monument?

Summary of Analytical Methods

The BLM identified the number of acres in each alternative that would be open and closed to ROWs and land use authorizations, ROW exclusion areas, and ROW avoidance areas, and land available for acquisition, retention, and disposal within the decision area. The BLM then considered how these designations would affect the availability of ROWs and land use authorizations on BLM-administered lands in the decision area. The geographic scale of analysis is the decision area (BLM-administered lands in the planning area). The temporal scale of the analysis is the lifetime of the RMP.

Indicators

- Acres open to ROWs
- Acres of land identified for ROW exclusion and avoidance
- Acres available for acquisition, retention, and disposal

Assumptions

- The demand for new ROWs and other land use authorizations will remain stable or increase slightly throughout the life of the RMP.
- Expanding uses adjacent to BLM-administered lands or on private inholdings within the BLM-administered lands, particularly residential and commercial development, increase the demand for ROWs on BLM-administered lands to accommodate those uses.
- Land tenure adjustments, including acquisition of inholdings and land exchanges, improve land efficiency by acquiring lands to consolidate federal ownership, providing connectivity of important resource values, and adjusting ownership patterns in a manner that furthers the Monument's protective purposes.
- Per Proclamation 9131, the BLM would continue to prohibit new ROW authorizations in the decision area during the life of the plan, including for wind and solar energy ROWs. Localized

renewable energy development could occur in the planning area, but it would not be on BLM-administered lands. Therefore, it would not require BLM ROW authorization.

Impacts Common to All Alternatives

Under all alternatives, the BLM would continue to avoid new ROW authorizations, except when they are necessary for the care and management of the Monument resources, objectives, and values, or are mandated by law. Thus, the number of ROWs would remain static or increase only minimally.

Under all alternatives, the BLM would identify 496,591 acres to be retained under BLM management. Per Proclamation 9131, the BLM would not identify any lands as available for disposal under any alternative.

Alternative A (No Action Alternative)

Under Alternative A, the BLM would continue to manage 210,152 acres as ROW avoidance areas, including the Butterfield Overland NHT, VRM Class II areas, and the remainder of the Monument. The BLM would manage 286,439 acres as ROW exclusion areas, including the Picacho Peak recreation area, ACECs, Aden Lava Flow RNA, Kilbourne Hole NNL, and wilderness areas (**Appendix A, Figure 2-13, Alternative A: Right-of-Way Exclusion and Avoidance Areas**).

Under Alternative A, the BLM would not target any lands for acquisition other than the two pending acquisitions within the Monument’s boundaries and the two pending edge-holding acquisitions (**Figure 3-14, Potential Land Acquisitions in the Organ Mountains Unit**). This may preclude the BLM from undertaking acquisitions that would further Proclamation 9131’s protective purposes and maintaining and improving access to public lands in the Monument. Since there would be no changes in existing conditions, Alternative A would have no adverse effects on land use authorizations and tenure.

Action Alternatives (Alternatives B through D)

Under the action alternatives, ROW avoidance would range from the lowest acreage of avoidance areas (208,421 acres under Alternative B) to the most avoidance areas (251,534 acres under Alternative D; see **Table 3-53**). Alternative B would have fewer acres of ROW avoidance areas than Alternative A. The BLM’s ability to grant ROWs would be the most constrained under Alternative D, given the large acreage of avoidance areas relative to current conditions. The acres of ROW avoidance under Alternative C would be similar to the acres under Alternative A along with the impacts.

**Table 3-53
ROW Avoidance and Exclusion Areas in the Decision Area**

Allocation	Alternative A (Acres)	Alternative B (Acres)	Alternative C (Acres)	Alternative D (Acres)
ROW exclusion	286,439	288,169	286,497	245,057
ROW avoidance	210,152	208,421	210,094	251,534

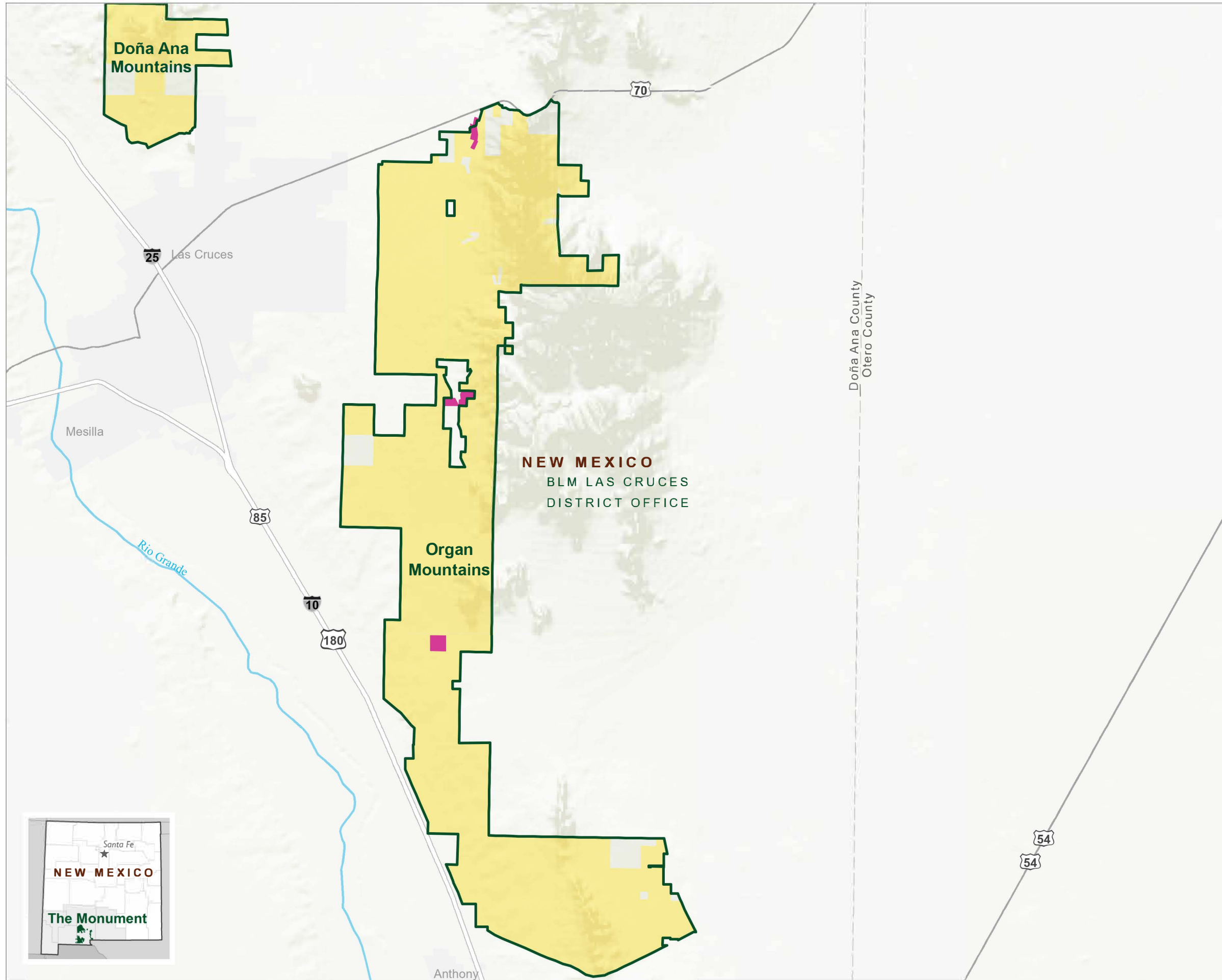
Source: BLM GIS 2022

Alternative D would have the fewest acres in ROW exclusion areas (245,057 acres; see **Table 3-53**), and Alternative B would have the most (288,169 acres). This acreage difference of 43,112 accounts for approximately 8.7 percent of the total decision area. The minimal variation in acreage for ROW exclusion areas would have little effect on the BLM's ability to grant ROWs on BLM-administered lands. Alternative C's acres of ROW exclusion areas would be similar to those under Alternative A. Within exclusion areas, new linear ROWs that terminate on private inholdings could be authorized if no other reasonable alternative exists; however, special stipulations would apply to these authorizations.

Under all action alternatives, the BLM would attempt to enter into an agreement to initiate an exchange for 240 acres of state trust land within the Monument's boundary in accordance with the Dingell Act (Public Law 116-9). This would enable the BLM to provide the most efficient management of public resources; protect Monument resources, objects, and values; and improve access to public lands in the Monument compared with Alternative A.

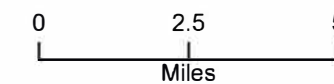
Cumulative Impacts

None of the reasonably foreseeable projects in the planning area are anticipated to cumulatively impact land use authorizations or land tenure in the Monument. Therefore, no cumulative impacts are anticipated under any of the alternatives.



**Figure 3-14
Potential Land Acquisitions in the
Organ Mountains Unit**

- Potential acquisition
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 December 22, 2023.
 OrganMtnsRMP_AE_ResourceUses_LandsRealtyAcquire.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters

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3.18 TRANSPORTATION AND ACCESS

3.18.1 Key Points

- There are no open areas for OHV travel in the Monument; limited to designated roads and closed to OHVs are the only area designations. Limited and closed designations would each represent approximately half of the decision area in each alternative except Alternative D.
- To promote successful long-term management, a comprehensive transportation and travel management plan is needed to better manage OHV areas and routes in the Monument.
- Alternative B would increase the miles of transportation routes closed to motorized use and impact the overall transportation access and opportunities more than all other alternatives.
- Alternative C would prioritize shared resource use between different users and resources. Alternative D would have the least miles of transportation routes closed to motorized travel and impact overall transportation access and opportunities less than all other alternatives.

3.18.2 Affected Environment

Travel and transportation management consists of implementing travel and transportation planning decisions, inventorying and mapping routes, signing areas, designating routes, educating and interpreting, enforcing laws, acquiring easements, monitoring, and undertaking other measures necessary for providing access to and across public lands for a wide variety of uses. Such uses include recreational, traditional, authorized, commercial, educational, and other kinds of uses involving travel and transportation, as well as all forms of motorized and nonmotorized traveler use, such as foot, pack stock or animal-assisted, mountain bike, and OHV travel.

This section addresses planning-level management for transportation and access for the Monument for motorized and nonmotorized surface travel and air transportation. It is anticipated that the BLM LCDO will develop one or more integrated travel and transportation management plans separately from this RMP/EIS during implementation. The plan(s) will identify road or trail management objectives, locations and the geographic extent of roads and trails, types of use, functional class, road or trail standards, and maintenance and ROW marking level. The transportation plan(s) also will identify access-related easement acquisition needs.

The general objective of the BLM's transportation management program is to provide adequate access for administrative purposes and to accommodate public use in support of the BLM's multiple-use programs. Direction and guidance for managing transportation and access were established primarily by the 1993 Mimbres RMP, Presidential Proclamation 9131, the Dingell Act, the Wilderness Act, and the FLPMA. **Section 3.16**, Recreation, contains additional information regarding nonmotorized transportation. Further, the Monument's Proclamation sets the parameters for road use and access. Except for emergency or authorized administrative purposes, motorized vehicle use in the Monument is allowed only on designated roads, and nonmotorized mechanized vehicle use is allowed only on roads and trails designated for this use. No additional roads or trails may be established for motorized vehicle or nonmotorized mechanized vehicle use, unless necessary for public safety or protection of Monument objects.

Main access to the Monument is provided by two interstates (Interstate 10 and Interstate 25) and two US highways (US 70 and 54). Interstate 10 extends through Doña Ana County, linking Las Cruces to the El Paso metropolitan area (located south of the planning area). Interstate 10 provides the primary access into New Mexico from Texas and the international border with Mexico.

The Monument has existing routes within each of its four units, as shown in **Figure 3-15**, Existing Transportation Network. There are also developed routes in the Aguirre Spring National Recreation Area (6.0 miles), on the Dripping Springs Natural Area entrance road (2.1 miles), and on La Cueva Road (0.8 miles); these are paved roads maintained by the BLM.

State Routes 9 and 26 and other county routes pass through the planning area, connecting cities inside and outside the planning area. Most of these routes that continue through Doña Ana County are regularly maintained. However, unimproved routes also extend from the main route network throughout the planning area and Doña Ana County. Section 2.2.6.1, Transportation and Access, of the AMS (BLM 2022a) contains more information on the modes of travel authorized in the Monument.

Access-related concerns have increased as the demand for access and use of public land has increased (BLM 1993). Some external roads leading into the Monument are inaccessible, as they cross through private or state trust land without legal access.

In the Monument, there are several different types of vehicles and uses that are permitted in the planning area. Visitors can engage in motorized and nonmotorized (bicycle, equestrian, and hiking) use on designated routes. Most routes in the planning area are primarily used for recreation purposes.

There are approximately 496,591 acres of motorized, nonmotorized, and mechanized route designations within the Monument planning area. Within this acreage, there are 799 miles of transportation routes in the Monument. The planning area contains 657 miles of motorized, 31 miles of nonmotorized, and 111 miles of mechanized routes.

Maintenance of roads within the Monument is carried out by BLM-authorized private, federal, state, and local government entities. Doña Ana County manages and maintains 136 miles of the roads in the Monument.

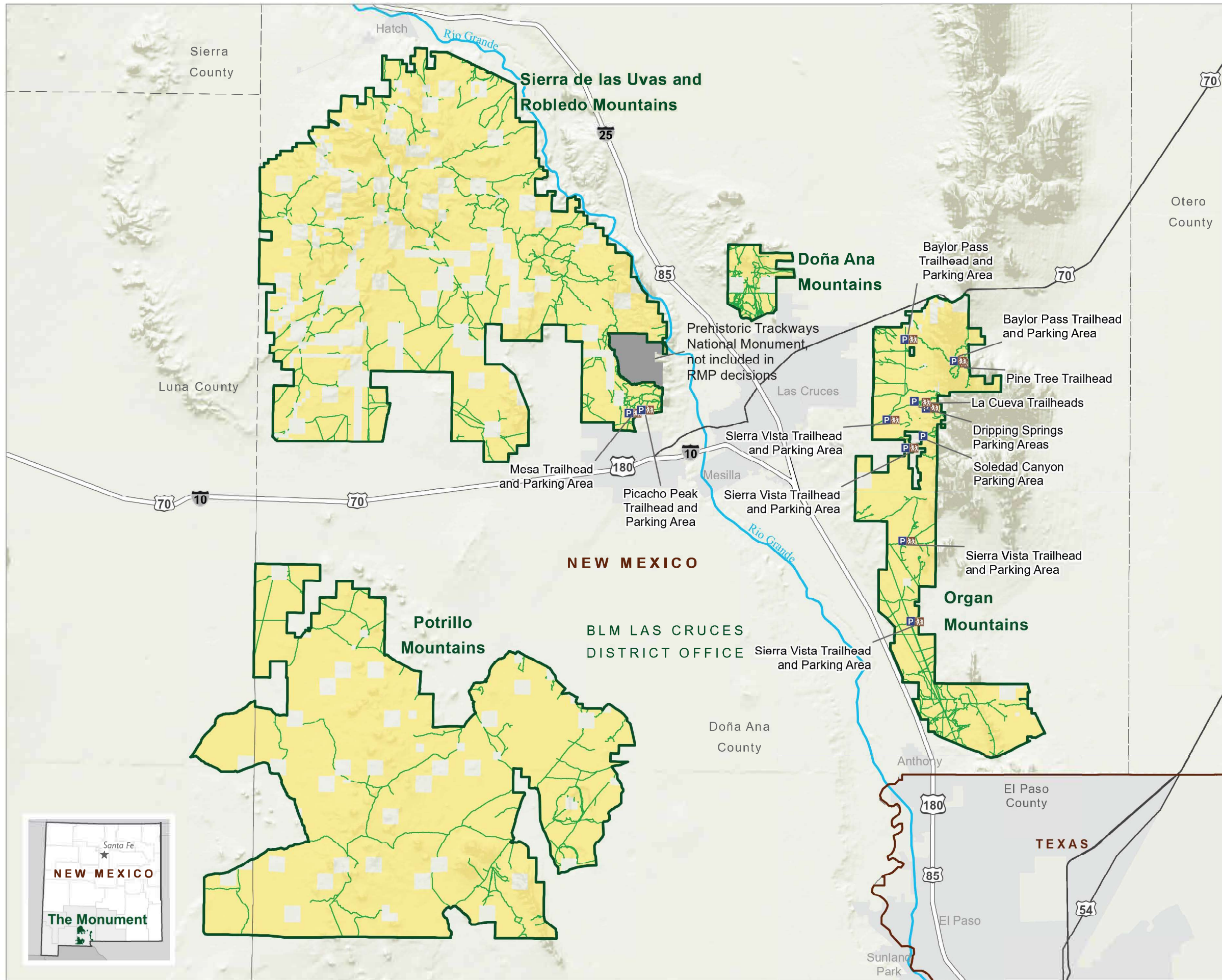
Special Designations

As described above, Proclamation 9131 limited motorized travel in the entire Monument to designated roads. However, some special designations were closed to motorized travel in the Mimbres RMP (BLM 1993) or as a result of the Dingell Act.

Areas closed to motorized travel include:

- A portion of the Organ/Franklin Mountains ACEC that is considered scenic (8,840 acres), is designated as VRM Class I (refer to **Section 3.14**, Visual Resources for additional information on visual resources), and has elevations of 5,000 feet or higher (BLM 1993)
- Approximately 239,596 acres of wilderness areas designated under the Dingell Act

Additional information is available in Sections 2.2.6 and 3.18, Transportation and Access, of the AMS (BLM 2022a).



**Figure 3-15
Existing Transportation Network**

- Parking area
- Trailhead
- Existing route
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 December 28, 2023, OrganMtnsRMP_AE_resourceUses_Travel_Network.mxd
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

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3.18.3 Environmental Consequences

Issue 1: How would changes in OHV travel designations and routes outside of and inside special designations impact transportation use and access in the Monument?

Summary of Analytical Methods

The spatial analysis area involves specific changes on BLM-administered land to OHV limited and closed designations and routes under each alternative.

Indicators

- Acres of OHV travel designations
- Miles of OHV travel routes
- Acres of OHV travel designations in areas with special designations
- Areas to be acquired and the level of existing access to OHV routes in those areas

Assumptions

- Those seeking access in the decision area have different and potentially conflicting ideas of what should constitute public access on public lands.
- Area designations will remain the same for the life of the RMP.
- Transportation and access will increase in areas where additional OHV use is allowed.

Impacts Common to All Alternatives

All designated wilderness areas (239,596 acres) would be closed to OHV travel unless for administrative and emergency purposes. Transportation and access in wilderness areas would not change. All areas of the Monument that are not closed to OHV travel would limit OHV travel to designated roads. This means that an increase in acres closed to OHV travel would be accompanied by a decrease in acres limited to designated roads in the Monument, and vice-versa.

Climate change may alter opportunities for travel and access in the planning area. Extreme weather events, such as torrential rainstorms and flash flooding, could damage infrastructure and facilities.

Alternative A (No Action Alternative)

OHV Designations

Under Alternative A, the BLM would continue to manage 242,889 acres as closed to OHV travel in designated wilderness areas and scenic portions of the Organ/Franklin Mountains ACEC. Approximately 48.9 percent of the Monument would continue to be closed to OHV travel with no areas proposed for additional OHV closures in the future. OHV travel would be limited to designated roads on the remainder of the Monument (253,702 acres, or 51.1 percent of the Monument). **Table 3-54** and **Table 3-55** summarize the percentage change and the total acres closed to OHV use and limited to designated routes under the alternatives, respectively.

Table 3-54
Total Percentage of Travel Designations by Alternative in the Monument

Designation	Alternative A	Alternative B	Alternative C	Alternative D
OHV Closed Designations (Acres)				
Total percentage of closed OHV designations ¹	48.9	54.3	51.5	48.2
Percent change of OHV closure designations in the Monument compared with Alternative A ²	N/A	+5.4	+2.6	-0.7
OHV Limited Designations (Acres)				
Total percentage of limited OHV designations ³	51.1	45.7	48.5	51.8
Percent change of OHV limited designations in the Monument compared with Alternative A ⁴	N/A	-5.4	-2.6	+0.7
Total ⁵	100	100	100	100

Source: BLM GIS 2022

¹ Calculated using the total acreage of OHV closed designations and dividing it by the combined acres of OHV closed and limited travel designations

² Calculated by subtracting the action alternatives' total percentage of OHV closed designations from Alternative A's total percentage of OHV closed designations

³ Calculated using the total acreage of OHV limited designations and dividing it by the combined acres of OHV closed and limited travel designations

⁴ Calculated by subtracting the action alternatives' total percentage of OHV limited designations from Alternative A's total percentage of OHV limited designations

⁵ Calculated by adding the total percentages of OHV closed and limited designations together

Table 3-55
Total Acres of OHV Closed and Limited Travel Designations by Alternative that Occur in the Monument

Designation	Alternative A	Alternative B	Alternative C	Alternative D
OHV Closed Designations (Acres)				
Total acres of OHV closed designations ¹	242,889	269,697	255,870	239,596
Total OHV closed acreage difference compared with Alternative A ²	N/A	+26,808	+12,981	-3,293
Total percent change of OHV closed designations compared with Alternative A ³	N/A	+11.0	+5.3	-0.7
OHV Limited Designations (Acres)				
Total acreage of OHV routes limited ⁴	253,702	226,894	240,721	256,994
Total OHV limited acreage difference ⁵	N/A	-26,808	-12,981	+3,293

Designation	Alternative A	Alternative B	Alternative C	Alternative D
Percent change from Alternative A to the action alternatives	N/A	-10.6	-5.1	+1.3
Total acres of OHV closed and limited designations ⁶	496,591	496,591	496,591	496,591

Source: BLM GIS 2022

¹ Total acreage of OHV closed designations in the Monument; includes all special designations

² Calculated by taking the acres of OHV closed designations from an action alternative and subtracting it from Alternative A's total acreage of OHV closed designations

³ Calculated by the percent change from Alternative A compared with the action alternatives

⁴ Total acreage of OHV limited designations in the Monument; includes all special designations

⁵ Calculated by taking the acres of OHV limited designations from an action alternative and subtracting it from Alternative A's total acreage of OHV limited designations

⁶ Calculated by adding the total of OHV closed and limited designations

OHV Access in Special Designations

Under Alternative A, 242,723¹² acres of special designation areas would be closed to OHV travel in the Monument. OHV closures inside special designations would represent 48.9 percent of overall OHV closure designations in the Monument (see **Table 3-56**). OHV access would continue to be closed in all designated wilderness areas and the scenic portion of the Organ/Franklin Mountains ACEC. OHV access would not change since there would be no new additional route closures under Alternative A.

Table 3-56
Percentage of OHV Closed and Limited Designations that Occur in Special Designations in the Monument

Designation	Alternative A	Alternative B	Alternative C	Alternative D
OHV Closed Designations in Special Designations¹				
Total acreage of OHV routes closed in special designations ²	242,723	265,299	250,333	239,596
Total difference of OHV closures in special designations compared with Alternative A ³	N/A	+22,576	+7,610	-3,127
Percent change from Alternative A to the action alternatives ⁴	N/A	+9.3	+3.1	-1.3
Total percentage of OHV routes closed in special designations ⁵	48.9	53.4	50.4	48.2
OHV Limited Designations in Special Designations				
Total acreage of OHV limited designations in special designations	45,203	25,936	37,651	10,302
Total difference of OHV limited designations in special designations compared with Alternative A ⁶	N/A	-19,267	-7,552	-34,901
Percent change from Alternative A to the action alternatives	N/A	-42.6	-16.7	-77.2
Total percentage of OHV limited designations in special designations	9.1	5.2	7.6	2.1

¹² Special designations for this calculation include ACECs, NHTs, NNLs, and wilderness areas.

Designation	Alternative A	Alternative B	Alternative C	Alternative D
OHV Closed and Limited Designations Outside Special Designations				
Total acreage of OHV closed and limited routes outside special designations ⁷	208,665	205,356	208,607	246,692
Total percentage of OHV closed and limited routes outside special designations	42.0	41.4	42.0	49.7
Total acres ⁸	496,591	496,591	496,591	496,590
Total acreage percentages ⁵	100	100	100	100

Source: BLM GIS 2022

¹ Special designations for this calculation include ACECs, NHTs, NNLs, and wilderness areas. For boundaries that overlap, a hierarchy for the special designations was developed (for example, if wilderness overlaps an ACEC and NHTs, remove the overlapping ACEC; if an ACEC overlaps NHTs or NNLs, remove overlapping NHTs or NNLs).

² Total acreage is calculated based on the total acreage of OHV limited and closed routes that include all special designations, as well as RNAs, SRMAs, and recreation areas. The number is calculated by adding the total acres of OHV closed and limited routes that occur in special designations, then subtracting that combined number from the overall OHV closed and limited acreage in the Monument.

³ Calculated by taking the acres of OHV closed designations in special designations from an action alternative and subtracting it from Alternative A's total acreage of OHV closed designations occurring in special designations.

⁴ Calculated by the percent change from Alternative A compared with the action alternatives.

⁵ Calculated based on the total acreage of OHV limited and closed routes that include RNAs, SRMAs, and recreation areas. Special designations, such as ACECs, NHTs, NNLs, and wilderness, are included in the overall acreage calculation. This number is not reflective of the percent change for areas outside special designations compared with Alternative A.

⁶ Calculated by taking the acres of OHV limited designations in special designations from an action alternative and subtracting it from Alternative A's total acreage of OHV limited designations occurring in special designations.

⁷ Special designations for this total do not include ACEC, NHTs, NNLs, and wilderness areas.

⁸ Calculated by adding OHV closed and limited designations inside and outside special designations.

Under Alternative A, 45,203 acres of special designation areas would be limited to designated roads in the Monument. OHV limited designations in special designation areas would continue to represent 9.1 percent of overall OHV limited designations in the Monument (see **Table 3-56**). Access and use in OHV limited areas would continue at current levels, and conflicts with other recreation users would continue in areas where OHV travel is limited to designated use in special designation areas that are popular with nonmotorized recreation users.

OHV Area Acquisition and Access

Under Alternative A, transportation and public access would be improved from the legal acquisition of private properties and existing routes in areas south of Soledad Canyon for public access and OHV use. This would lead to an increase in transportation access through the south of Soledad Canyon. Additionally, the acquisition of existing routes and properties of interest on the north and west sides of the West Potrillo Mountains would increase transportation and public access to the area.

Action Alternatives (Alternatives B through D)

OHV Designations

Under the action alternatives, various areas would be closed to OHV travel throughout the Monument. Of all the alternatives, Alternative B would have the most acres closed to OHV travel (26,808 more acres compared with Alternative A). Under Alternative B, in addition to designated wilderness areas, OHV travel would be prohibited in the Northern Doña Ana Mountains RMZ, the Picacho Peak SRMA, the scenic portion of the Organ/Franklin Mountains ACEC, the Doña Ana Mountains ACEC, and the Kilbourne Hole NNL. Closure of these areas would decrease opportunities to enter the northern Doña Ana Mountains,

the southeastern portion of the Sierra de las Uvas and Robledo Mountains unit, the northeastern segments of the Organ Mountains unit, and an area in the western Potrillo Mountains unit. The reduced travel in these areas would concentrate visitors to limited routed entrances (**Appendix A, Figure 2-18, Alternative B: Transportation and Access**).

Of all the alternatives, Alternative C would have the second-most acres closed to OHV travel (12,981 more acres than Alternative A). In addition to designated wilderness areas, closures would occur in the northern Doña Ana Mountains RMZ, Picacho Peak, and Kilbourne Hole NNL. Compared with Alternative A, closure of these areas would decrease opportunities to enter the northern Doña Ana Mountains, the southeastern portion of the Sierra de las Uvas and Robledo Mountains unit, and an area in the western Potrillo Mountains unit. These closures would concentrate travel to limited routes and trails.

Of all the alternatives, Alternative D would have the fewest acres closed to OHV travel (3,293 fewer acres than Alternative A). Only designated wilderness areas would be closed to OHV travel under this alternative. Transportation access would increase in the lower north and upper northeast sections of the Organ Mountains unit, compared with Alternative A. Management actions would prevent the use of OHV travel in designated wilderness with the same impacts as those under Alternative A. **Table 3-56** shows the percentage change in areas that would be subject to OHV closure and limited designations, while **Table 3-55** displays the total number of acres that would be subject to OHV closure and limited designations.

Overall, Alternative B would result in the least transportation access and entry to areas in the Monument because it would close the most acres to OHV travel. Alternative C would have the second-most closures to OHV travel, which would also reduce access compared with Alternative A. Under Alternatives B and C, the closure of certain ACECs, SRMAs or RMZs, and the NNL to OHV travel would decrease overall transportation access and concentrate use in fewer areas, compared with under Alternative A.

OHV Access in Special Designations

Under the action alternatives, the BLM would close 265,299 acres (Alternative B), 250,333 acres (Alternative C), and 239,596 acres (Alternative D) to OHV travel in special designations in the Monument. OHV access to all special designations would decrease compared with Alternative A. However, routes would not be taken away Alternatives B and C would have the highest number of acres closed to OHV travel in special designations (53.4 and 50.4 percent of the Monument, respectively; see **Table 3-56**) compared with Alternative A (48.9 percent of the Monument; see **Table 3-56**). However, the total acres and closed areas would differ between Alternatives B and C because of management changes in special designations. Reduced access to special designations would result in fewer areas for Monument users to enter, which would increase chokehold points and reduce overall access.

Of the action alternatives, Alternative D would close the fewest acres to OHV travel (1.3 percent fewer acres compared with Alternative A). This would not result in a meaningful change in a loss of access to special designations. Special designations would receive the most protection under Alternative B, because more areas would be subject to OHV travel closures compared with Alternative A (22,576 more acres compared with Alternative A; see **Table 3-56**). Alternatives B and C would close OHV access in all designated wilderness areas, the Northern Doña Ana Mountains RMZ, the scenic portion of the Organ/Franklin Mountains ACEC, and the Kilbourne Hole NNL. This would result in a decrease in OHV access and travel opportunities because more acreage would be subject to OHV closures. Travel access

into specified ACECs, SRMAs, and the NNL would decrease under Alternatives B and C since there would be fewer access points compared with Alternative A. **Table 3-56** displays the total acres and acre changes for OHV closed and limited routes inside and outside special designations.

OHV Area Acquisition and Access

Across all action alternatives, transportation access would be improved through the legal acquisition of private properties in areas of Achenbach Canyon south of Soledad Canyon to improve public access to the Organ Mountains Wilderness. While OHVs would not be permitted in wilderness areas,¹³ transportation access for the Organ Mountains Wilderness would be improved because additional existing access routes would be available to public use, compared with Alternative A. This would lead to an increase in transportation access through the south of the Organ Mountains Wilderness. To the west, in the Potrillo Mountains, no new legal public access sites would be located on the north and west sides, which would maintain the existing level of access to the Potrillo Mountains and continue the likelihood of chokehold points in the area compared with Alternative A. However, other areas in the Monument would see increases in public access compared with Alternative A.

Under all action alternatives, transportation and public access to the Sierra de las Uvas Wilderness would be improved through the legal acquisition of existing routes or properties in areas of interest. This would lead to an increase in transportation access in the Sierra de las Uvas Wilderness compared with Alternative A. While OHV travel would be prohibited in the wilderness area, the legal acquisition of additional access points would help improve overall transportation and reduce chokehold points in the wilderness area. Acquisition of non-federally owned segments of the Butterfield Overland NHT may also increase public-use opportunities if the acquired parcels contain existing roads and trails that are designated for motorized and/or mechanized use.

Across all action alternatives, transportation and public access to the Picacho Peak recreation area would be improved through the legal acquisition of existing routes or properties in areas of interest, compared with Alternative A. OHV use would be prohibited in the Picacho Peak SRMA under Alternatives B and C, but overall access to the recreation area would be improved compared with Alternative A.

Cumulative Impacts

Several recreation facilities would be upgraded, modernized, and improved, regardless of any alternative selections. Substantial improvements will be made to the Dripping Springs Natural Area, Sierra Vista Trailhead, Cox Visitor Center and Compound, Soledad Canyon Day Use Area, and Aguirre Spring National Recreation Area. Upgrades include the installation of new recreation facilities and upgrades (toilets, visitor center upgrades, amphitheater improvements, and maintenance) and access improvements (parking, road access, and Americans with Disabilities Act compliance). Specific improvements, along with the anticipated timeline, can be found in **Table 3-1**. These improvements are expected to increase travel experiences, opportunities, and access by expanding the necessary infrastructure and facilities that were mentioned in the recreation group study (Casey et al. 2018). Cumulative impacts would be the same under all alternatives.

¹³ Aden Lava Flow Wilderness, Broad Canyon Wilderness, Cinder Cone Wilderness, East Potrillo Mountains Wilderness, Sierra de las Uvas Wilderness, Mount Riley Wilderness, Organ Mountains Wilderness, Robledo Mountains Wilderness, Whitehorn Wilderness, and Potrillo Mountains Wilderness. OHV travel would not be permitted because it would be a violation of the [Wilderness Act of 1964](#).

3.19 SPECIAL DESIGNATIONS

3.19.1 Key Points

- Under all alternatives, the Butterfield Overland NHT, the Kilbourne Hole NNL, and designated wilderness areas would remain the same. Impacts on certain resources in Kilbourne Hole NNL would change by alternative due to differing restrictions on OHV use and recreation.
- Impacts on the relevant and important values of existing and proposed ACECs would not vary substantially between alternatives that designate or undesignate them due to other protections from Proclamation 9131 and management of designated wilderness areas overlapping these areas.
- Impacts on the resources in the Aden Lava Flow RNA would be the same under all alternatives, regardless of whether the RNA is designated or undesignated. This is because the RNA is entirely within designated wilderness.

3.19.2 Affected Environment

The BLM, through previous inventory and planning efforts, has identified public land for special designation within the Monument, including three ACECs, one RNA, one NNL, and one proposed national historic trail. The Dingell Act in 2019 also designated 10 wilderness areas within the Monument.

Areas of Critical Environmental Concern and Research Natural Areas

The BLM designates ACECs where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, and scenic values; to protect and prevent irreparable damage to fish, wildlife resources, or other natural systems or processes; or to protect human life and safety from natural hazards. To be eligible for and designated as an ACEC, the area must meet the criteria for both relevance and importance found in 43 CFR 1610-7-2(a)(b), and as defined in BLM Manual 1613, Areas of Critical Environmental Concern (BLM 1988). BLM regulations for implementing the ACEC provisions of FLPMA are found in 43 CFR 1610.7-2(b).

ACECs differ from some other special management designations in that designation by itself does not automatically prohibit or restrict other uses in the area. The special management attention is designed specifically for the relevant and important values; therefore, it varies from area to area. Restrictions that arise from an ACEC designation are determined at the time the designation is made and are designed to protect the values or serve the purposes for which the designation was made.

An RNA is “an area that is established and maintained for the primary purpose of research and education” (43 CFR 8223). The land must have at least one of the following characteristics:

- A typical representation of a common plant or animal association
- An unusual plant or animal association
- A threatened or endangered plant or animal species
- A typical representation of common geological, soil, or water features or outstanding or unusual geological, soil, or water features
- Area of sufficient number and size to adequately provide for scientific study, research, and demonstration purposes

The Monument currently contains three ACECs and one RNA, comprising 64,073 acres. The BLM ACEC manual states that RNAs are considered a type of ACEC (BLM 1988). **Table 3-57** shows the ACECs and RNA within the Monument, their acreages, and their relevant and important values. The BLM will use the same criteria described above to evaluate existing or proposed new ACECs and RNAs.

Table 3-57
ACECs and RNAs in the Monument

ACECs	Acreage	Relevant and Important Values
Organ/Franklin Mountains	54,817	Scenic values (Organ Mountains and Franklin Mountains), special status species (night-blooming cereus, Organ Mountains evening primrose, Sneed’s pincushion cactus, Organ Mountains chipmunk, and desert bighorn sheep), biological resources (Ice Canyon riparian area), and cultural resources (La Cueva and Dripping Springs)
Robledo Mountains	7,829	Scenic values (peaks visible from Interstate 25 and the northern Mesilla Valley), special status species (Madrean alligator lizard and Trans-Pecos rat snake), biological resources (State-endangered button cactus and Sneed’s pincushion cactus), paleontological resources (Paleozoic Era fossil footprints), and cultural resources (some of the earliest known prehistoric habitation sites in southern New Mexico)
Doña Ana Mountains	1,427	Scenic values (local significance, highly scenic peaks within the view of most of the Mesilla Valley and the northeast portion of Las Cruces), biological resources (State-endangered Doña Ana Mountains land snail [<i>Sonorella todseni</i>] and a high diversity of cacti), and cultural resources
RNAs	Acreage	Prominent Feature
Aden Lava Flow	3,736	Aden Crater, scenic and geological values
Proposed ACECs	Acres	Relevant and Important Values
Broad Canyon	4,720	Scenic values (multicolored cliffs and desert vegetation), biological resources, and cultural resources (86 archaeological sites representing Paleoindian, Archaic, Jornada Mogollon, Mimbres Mogollon, and Apache cultures)
East Potrillo Mountains	9,040	Scenic values (prominent scenic feature along State Road 9 and visible from El Paso, Texas, and Interstate 10)
Picacho Peak	949	Scenic values (local significance, highly scenic peaks within the view of most of the Mesilla Valley) and historic values (the Butterfield Overland NHT follows northern and western boundaries)

Source: BLM GIS 2022

Kilbourne Hole NNL

The Kilbourne Hole NNL is a volcanic maar¹⁴ approximately 20 miles southwest of Las Cruces in Doña Ana County, New Mexico. The NNL encompasses 5,460 acres in the Potrillo Mountains unit of the Monument. Kilbourne Hole is a crater that formed when a volcanic bubble burst on the earth’s surface. It was designated as an NNL because it was considered the best example of a maar in the Chihuahuan Desert region.

¹⁴ A maar is a broad, shallow crater, typically filled by a lake and formed by a volcanic eruption, often with little lava.

Designated Wilderness

There are 10 designated wilderness areas within the Monument comprising 239,596 acres. With the passage of the Dingell Act in 2019, eight wilderness study areas were converted to seven designated wilderness areas. The Dingell Act also designated three additional wilderness areas. Doña Ana Mountains is the only unit in the Monument that does not contain wilderness.

Table 3-58 shows the wilderness areas, acreages, and previous wilderness study area designations. These designated wilderness areas provide opportunities isolated and primitive recreation within the Monument, whereas outside the designated wilderness, the remaining recreation areas are heavily used, developed, and easily accessible. Impacts on designated wilderness areas are not analyzed as part of this EIS because wilderness character in all designated wilderness areas will be preserved across all alternatives.

**Table 3-58
Wilderness in the Monument**

Designated Wilderness	Acreage	Previous Wilderness Study Area(s) Included
Aden Lava Flow	27,625	Aden Lava Flow
Broad Canyon	13,855	N/A
Cinder Cone	16,932	West Portillo Mountains
East Potrillo Mountains	12,063	N/A
Mount Riley	8,382	Mount Riley
Organ Mountains	19,052	Organ Mountains Organ Needles Pena Blanca
Potrillo Mountains	105,020	West Portillo Mountains
Robledo Mountains	15,954	Robledo Mountains
Sierra de las Uvas	11,106	Las Uvas Mountains
Whitehorn	9,609	N/A
Total	239,596	—

Source: BLM GIS 2022

National Historic Trail

The BLM manages one national historic trail within the Monument. Approximately 20 miles of the Butterfield Overland NHT cross through the planning area. The Butterfield Overland NHT was designated by Public Law 117-345 on January 5, 2023, for inclusion into the National Trails System. The trail commemorates the routes pioneered by John Butterfield and the Butterfield Overland Stage Company as they traveled between the eastern termini of St. Louis, Missouri, and Memphis, Tennessee, and the western terminus of San Francisco, California. Stages traveled over this route between 1858 and 1861 (NPS 2022).

Additionally, the viewshed of the El Camino Real de Tierra Adentro NHT overlaps with the planning area. Designated in 2000, the trail was established to recognize the primary route between the colonial Spanish capital of Mexico City and the Spanish provincial capitals in what are now Mexico and New Mexico between the sixteenth and nineteenth centuries.

Additional information is available in Sections 2.2.7 and 3.19, Special Designations, of the AMS (BLM 2022a).

3.19.3 Environmental Consequences

Issue 1: How would proposed management impact the relevant and important values identified for existing and proposed ACECs?

Summary of Analytical Methods

The analysis area for existing and proposed ACECs includes each identified ACEC within the decision area. The temporal scale of analysis is the life of the plan. Under alternatives where ACECs are proposed for designation, special management for ACECs would provide a more focused approach to protecting relevant and important values. Under alternatives where ACECs are not proposed for designation, protection of relevant and important values would rely on the overall management identified in Proclamation 9131 and on specific management actions under other resources or resource uses. Because it is assumed that designation of an ACEC includes management actions to protect its relevant and important values, the analysis focuses on alternatives in which an existing or proposed ACEC is not designated to examine how the relevant and important values would be affected.

Indicators

- Acreages of designated and undesignated ACECs
- 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 1988)

Assumptions

- Excluding feral animals from ACECs would involve fencing; fencing would avoid resources that ACECs are designated to protect.
- Although management actions for most resources and resource uses could have decision area-wide application, ACEC management prescriptions apply only to those lands in each specific ACEC.
- Permitted activities are assumed to have mitigations proposed so as not to impair the relevant and important values for which an ACEC is designated.

Impacts Common to All Alternatives

Under all alternatives, the Monument would be withdrawn from all forms of mineral entry and disposal, which would prevent mineral development activities from creating surface disturbance or other impacts within ACECs. Additionally, casual collection of minerals, petrified wood, and common non-vertebrate fossils would be prohibited in all areas of the Monument, including ACECs, under all alternatives. The entire Monument would be managed as either ROW avoidance (with very limited exceptions) or exclusion, and OHV use would be either limited to designated roads and trails or prohibited. This management, pursuant to Proclamation 9131, would reduce surface disturbance, damage to or removal of cultural and paleontological artifacts and species habitat, and changes to scenic values from development of new infrastructure in existing and proposed ACECs in the Monument. Where existing or proposed ACECs overlap designated wilderness, additional protective wilderness management, such as VRM Class I, closures to OHV use, and ROW exclusion would further protect these values. The BLM has taken these factors into consideration in determining which alternatives would designate or not designate certain ACECs.

Alternative A (No Action Alternative)

Alternative A reflects the current management practices under the 1993 Mimbres RMP as well as Proclamation 9131 and the Dingell Act of 2019. Under this alternative, the Monument would continue to include three designated ACECs: Doña Ana Mountains, Organ/Franklin Mountains, and Robledo Mountains. In addition to the management and impacts common to all alternatives, management outlined in the 1993 plan includes protection of biological, scenic, and cultural values. In general, management actions that protect resources—such as improvements in water quality and quantity, surface disturbance restrictions, management for desired plant communities and habitats, travel restrictions and closures, and recreation restrictions—would help maintain and improve relevant and important values within ACECs.

The three proposed ACECs (Broad Canyon, East Potrillo Mountains, and Picacho Peak) would not be designated; however, they would continue to be managed according to Proclamation 9131 and other applicable management. Because 8,984 acres (99 percent) of the East Potrillo Mountains proposed ACEC and 3,154 acres (67 percent) of the Broad Canyon proposed ACEC overlap designated wilderness, the relevant and important scenic, biological, and cultural values of these areas would be protected, as noted under *Impacts Common to All Alternatives*. Impacts on the scenic, biological, cultural, and historic values of the 56 acres (1 percent) of the East Potrillo Mountains proposed ACEC, the 1,566 acres (33 percent) of the Broad Canyon proposed ACEC, and the entire Picacho Peak proposed ACEC that are outside designated wilderness could occur, such as changes to scenery and the cultural and historic setting, due to modifications to existing ROWs. However, the potential for these impacts would be small due to the management required under Proclamation 9131 to protect Monument objects, as described under *Impacts Common to All Alternatives*.

Action Alternatives (Alternatives B through D)

Under all action alternatives, the Robledo Mountains ACEC would be undesignated. Because the area is entirely within designated wilderness, the relevant and important values, including the scenic, biological, paleontological, and cultural resources, would be protected by both Proclamation 9131 and required management for wilderness, as described under *Impacts Common to All Alternatives*. This management would continue to provide the same level of protection for the identified relevant and important values and would not negatively impact these resources.

Alternative B would designate the most ACECs, with three new ACECs (Broad Canyon, East Potrillo Mountains, and Picacho Peak), for a total of five designated ACECs in the Monument. Designation of these five ACECs would protect the relevant and important values associated with these areas by limiting activities that could harm or degrade these relevant and important values. Because of the protections provided under all alternatives by Proclamation 9131 and management of designated wilderness, and because it is assumed that the relevant and important values of an ACEC would be protected under any alternative in which it is designated, the difference in impacts compared with Alternative A would be limited. Specifically, managing all of the Broad Canyon ACEC as VRM Class II and ROW exclusion could reduce effects on the scenic values from modification of existing ROWs in the 1,566 acres (33 percent) of the ACEC outside designated wilderness. The same would be true from managing the Picacho Peak ACEC as VRM Class II and a ROW exclusion area.

In comparison with Alternative A, the Organ/Franklin Mountains ACEC would increase by 406 acres for a total of 55,223 acres under Alternative B. This includes 150 acres (less than 1 percent) of the ACEC that are outside designated wilderness. However, because these additional acres would not be part of the

scenic portion of the ACEC, they would not be subject to special management beyond Proclamation 9131 requirements. The exception to this is that dogs and pets would be prohibited throughout the ACEC, including in the additional 150 acres; this prohibition would reduce the risk of disturbance to special status species and biological and cultural resources.

Impacts under Alternative C on the Broad Canyon, East Potrillo Mountains, and Picacho Peak proposed ACECs would be the same as those under Alternative A. Designation of the Doña Ana Mountains and Organ/Franklin Mountains ACECs would continue to protect the relevant and important values of those ACECs, as described under Alternative A. Although the Organ/Franklin Mountains ACEC would decrease by 18,565 acres to 36,658 acres, the area that would not be designated as an ACEC would be entirely within designated wilderness. The relevant and important scenic, biological, and cultural values in this area would be protected, as described under *Impacts Common to All Alternatives*. As a result, management would continue to provide the same level of protection for the identified relevant and important values and would not negatively impact the resources.

Impacts under Alternative D on the Broad Canyon, East Potrillo Mountains, and Picacho Peak proposed ACECs would be the same as those under Alternative A. Impacts on the biological resources in the upper Ice Canyon riparian area could increase, compared with Alternative A, because fewer restrictions on hiking and pets in the area could increase disturbance and trampling of the riparian vegetation. Otherwise, impacts from management of the 36,960 acres (67 percent) of the Organ/Franklin Mountains ACEC outside designated wilderness would be the same as described under Alternative A; this is due to the requirements of Proclamation 9131. The relevant and important values of the ACEC would continue to be protected, with the exception of the riparian vegetation in the upper Ice Canyon riparian area.

Compared with under Alternative A, impacts on relevant and important biological resources (specifically, the diversity of cacti) in the Doña Ana Mountains ACEC could increase under Alternative D; this is because the ACEC would be undesignated, and the road used for illegal plant collecting would remain open. This would increase the risk of removal and damage to cacti. Other scenic, biological, and cultural relevant and important values would remain protected by the management under Proclamation 9131, as described under *Impacts Common to All Alternatives*.

Cumulative Impacts

None of the reasonably foreseeable projects in the planning area are anticipated to cumulatively impact the relevant and important values of the ACECs. Therefore, no cumulative impacts are anticipated under any alternative.

Issue 2: How would proposed management impact the viewshed of the Butterfield Overland NHT?

Summary of Analytical Methods

The analysis area for the Butterfield Overland NHT's viewshed includes the trail corridor on BLM-administered lands within the planning area and the overlapping viewshed of the trail within the planning area. The temporal scale of the analysis is the life of the plan.

Indicators

- Acreage of the trail corridor and trail length
- Impact of management activities on the trail corridor's viewshed and historic values

Assumptions

- The BLM would follow the guidance in BLM Manual 6250—National Scenic and Historic Trail Administration (BLM 2012b) when addressing federal undertakings; therefore, adverse effects on the trail would be appropriately mitigated.

Impacts Common to All Alternatives

Under all alternatives, the acreage of the trail corridor will remain the same. The Monument is withdrawn from all forms of mineral entry and disposal, which prevents mineral development activities from creating surface disturbance or other impacts on the NHT. Monument-wide management actions would provide protections for the scenic values within the viewshed of those trail segments outside the planning area. These actions include ROW exclusion and avoidance, withdrawal from mineral entry, and OHV closures and OHVs limited to designated routes. The BLM would coordinate with the NPS for any site-specific developments within the Butterfield Overland NHT viewshed that could have impacts on scenic values.

Alternative A (No Action Alternative)

Under this alternative, the BLM would manage the Butterfield Overland NHT in accordance with BLM Manual 6250 and NPS direction, with OHVs limited to designated roads and trails, a recreation opportunity spectrum semiprimitive motorized class, ROW avoidance, and legal public access. Within a one-fourth-mile buffer of the trail, surface disturbances would not be allowed. Facilities, including power lines, would not be constructed parallel to the trail, though facilities that cross the trail would be considered, subject to the limitations in Proclamation 9131.

These actions would continue to maintain the viewshed integrity of the trail and continue to preserve the trail's historic values within the preserved one-fourth-mile buffer surrounding the trail. The general limitations on development within the Monument under Proclamation 9131 would provide additional protection for the viewshed.

Additionally, the BLM would manage cultural resources in accordance with the existing cultural resource management plan. Passive interpretation, such as signing, would be emphasized, as would land acquisition around Picacho Peak and next to the trail. The BLM would manage the area as VRM Class II, with the perspective of looking along the trail, rather than out from the sides of the trail. These actions would reduce the potential for impacts on cultural resources from ground disturbance; however, they could increase the potential impacts from increased recreation and visitation on these resources.

Action Alternatives (Alternatives B through D)

Under all action alternatives, the Butterfield Overland NHT would be managed to restrict surface-disturbing activities on either side of the trail to varying degrees. These protections would be greatest under Alternative B, which would extend the restrictions out 1 mile, compared with one-half mile under Alternative C and one-fourth mile under Alternative D. These protections would continue to maintain the trail's viewshed integrity and continue to preserve the trail's historic value by disallowing surface-disturbing activities within the trail's buffer. Impacts outside the buffer, but still within the viewshed, could occur to the limited extent allowed under Proclamation 9131.

Under all action alternatives, ground-disturbing activities within 3 miles would require a viewshed analysis on either side of the Butterfield Overland NHT. This is for the purpose of identifying and evaluating potential impacts on the NHT, its historic landscape, and its associated historic features. While the

Butterfield Overland NHT is protected from ground disturbance to some degree under all the alternatives, Alternative A would not require a viewshed analysis for proposed ground activities within a certain distance of the NHT. Outcomes of this could include modifications or designs to otherwise hide proposed features within the viewshed.

Under all action alternatives, a cultural resource management plan would be developed or updated, and non-federally owned segments of the trail within the Monument would be acquired. These actions would help maintain the trail's viewshed integrity. They also would help to preserve the trail's historic values.

Under all action alternatives, the management objective would include collaborating with the National Trails Office of the NPS and other agencies to protect, study, and interpret the historic values of the Butterfield Overland NHT. Like under Alternative A, the trail would be managed in accordance with BLM Manual 6250 and NPS direction. These actions would help maintain the viewshed integrity of the trail. They also would help to preserve the trail's historic values by providing cross-agency collaboration and protection to the trail. Segments not included on BLM-administered land could be retained and provided similar protections as those on BLM-administered lands; this would lead to comprehensive and continued protection of the trail as one unit.

Cumulative Impacts

None of the reasonably foreseeable projects in the planning area are anticipated to cumulatively impact the Butterfield Overland NHT. Therefore, no cumulative impacts are anticipated under any of the alternatives.

Issue 3: How would proposed management impact the viewshed of the El Camino Real de Tierra Adentro NHT?

Summary of Analytical Methods

The analysis area for the El Camino Real de Tierra Adentro NHT includes the overlapping viewshed of the trail within the planning area. The temporal scale of the analysis is the life of the plan.

Indicators

- Changes to the trail corridor's viewshed and historic values

Assumptions

- The BLM would follow the guidance in BLM Manual 6280—Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (BLM 2012c) when addressing federal undertakings; therefore, adverse effects on the trail would be appropriately mitigated.

Impacts Common to All Alternatives

Under all alternatives, Monument-wide management actions would provide protections for the scenic values within the viewshed of the El Camino Real de Tierra Adentro NHT. These actions include ROW exclusion and avoidance, withdrawal from mineral entry, and OHV closure and OHVs limited to designated routes. The BLM would coordinate with the NPS for any site-specific developments within the El Camino Real de Tierra Adentro NHT viewshed that could have impacts on the scenic values.

Action Alternatives (Alternatives B through D)

Under all action alternatives, ground-disturbing activities would not be permitted within 3 miles on either side of the El Camino Real de Tierra Adentro NHT. This is for the purpose of identifying and evaluating potential impacts on the NHT, its historic landscape, and its associated historic features. Outcomes of this could include modifications or designs to otherwise hid proposed features within the viewshed.

Cumulative Impacts

None of the reasonably foreseeable projects in the planning area are anticipated to cumulatively impact the scenic values within the viewshed of the El Camino Real de Tierra Adentro NHT. Therefore, no cumulative impacts are anticipated under any alternative.

Issue 4: How would proposed management impact the biological, scenic, geological, and research values of the Aden Lava Flow RNA?

Summary of Analytical Methods

The analysis area for the Aden Lava Flow RNA includes the acreage of the designated RNA within the planning area. The temporal scale of the analysis is the life of the plan.

Indicators

- Acreages of designated RNAs
- The impact of management activities on the quality of biological, scenic, geological, and research values of the RNA

Assumptions

- Although management actions for most resources and uses have Monument-wide application, RNA management prescriptions would apply only to those lands within each specific RNA.

Impacts Common to All Alternatives

Under all alternatives, Proclamation 9131 and management of designated wilderness in the Monument would protect the scenic and geological values of the Aden Lava Flow RNA through withdrawal from all forms of mineral entry and disposal, closures to casual collection of minerals, petrified wood, and common non-vertebrate fossils, management as ROW exclusion and VRM Class I, and closures to OHV use. This management would prevent damage to geological values from surface disturbance and OHV use and would prevent changes to scenery in the RNA.

Alternative A (No Action Alternative)

Under Alternative A, the BLM would continue to manage the Aden Lava Flow RNA to protect its biological, scenic, geological, and research values. Managing paleontological and geological features for research and interpretation and developing a process for research permitting and information exchange would continue to facilitate research access to the RNA. Development of a livestock grazing activity plan and consideration of chemical brush control where necessary to meet desired plant community objectives would continue to preserve and maintain the quality of the biological, scenic, geological, and research values of the RNA by limiting grazing and improving vegetation conditions in the RNA.

Action Alternatives (Alternatives B through D)

Under all action alternatives, the Aden Lava Flow RNA would be undesignated as an RNA, and it would not be designated as an ACEC. However, because the Aden Lava Flow RNA lies wholly within the Aden Lava Flow Wilderness, management would continue to provide the same level of protection for the identified biological, scenic, geological, and research values of the currently designated RNA, as described under *Impacts Common to All Alternatives*. Access for research could continue to be maintained and improved through implementation actions. Therefore, impacts would be the same as described under Alternative A.

Cumulative Impacts

None of the reasonably foreseeable projects in the planning area are anticipated to cumulatively impact the RNA. Therefore, no cumulative impacts are anticipated under any of the alternatives.

Issue 5: How would proposed management impact the geological, scenic, and research values of the Kilbourne Hole NNL?

Summary of Analytical Methods

The analysis area for the Kilbourne Hole NNL includes the acreage of designated NNL within the planning area. The temporal scale of the plan is the life of the plan.

Indicators

- Acreages of designated NNL
- Impact of management activities on the quality of the geological, scenic, and research values

Assumptions

- The BLM would need administrative or implementation-level actions to reduce the effects of vandalism. Because access would not be significantly restricted under any alternative, vandalism could still occur.

Impacts Common to All Alternatives

Under all alternatives, Proclamation 9131 would protect the geological, scenic, and research values of the Kilbourne Hole NNL through withdrawal from all forms of mineral entry and disposal and closures to casual collection of minerals, petrified wood, and common non-vertebrate fossils. This management would prevent damage to geological features and protect their research value. Under all alternatives, the NNL would be managed as ROW exclusion and OHV use would be limited to designated roads and trails or prohibited. This management would reduce surface disturbance, damage to or removal of geological artifacts, and changes to scenic values from development of new infrastructure in the NNL.

Alternative A (No Action Alternative)

Under Alternative A, the BLM would continue to protect the NNL's geological, scenic, and research values. Establishing a no-shooting safety restriction within the rim of the NNL would continue to protect the geological features in this area and preserve their research value, while consideration of chemical brush control where necessary to meet desired plant community objectives would continue to preserve and maintain the quality of the geological, scenic, and research values by improving vegetation conditions. Using signage for interpretation of geological features would promote scientific understanding of the NNL; establishing primitive facilities such as a parking area and toilets in up to 2 acres of the NNL, while

improving the visitor experience, may lead to impacts on the geological, scenic, and research values through increased visitation or the introduction of these facilities in the landscape.

Under Alternative A, the BLM would continue managing the NNL as a VRM Class III area; while this allows for a moderate degree of visual change, limitations imposed by Proclamation 9131 and by the ROW exclusion allocation would continue to prevent the introduction of new development in the NNL that would affect the scenic value of the area.

Action Alternatives (Alternatives B through D)

Under all of the action alternatives, the BLM would increase protections of the geological, scenic, and research values of the NNL by imposing a year-round no-shooting restriction within one-half mile of Kilbourne Hole. This restriction would prevent damage to geological and other resources and preserve their research value more than under Alternative A, which only prohibits shooting on the rim. The BLM would also increase protections of scenic values by managing the area below the rim of the crater as VRM Class II instead of Class III. As described under Alternative A, Proclamation 9131 and the ROW exclusion allocation already limit the degree of change that would occur and could thereby affect the geological, scenic, and research values of the NNL.

Alternative B would provide the greatest protections of the geological, scenic, and research values by closing the NNL to OHV uses, avoiding signage for interpretation of geological features, and not establishing primitive facilities. These actions would decrease the amount of surface disturbance, prevent damage to geological features, and protect their research value more than under Alternative A or the other action alternatives, which only limit OHV use to designated roads and trails and would include interpretive signage and primitive facilities. While Alternative B would provide more actions to preserve the geological, scenic, and research values, it would promote less scientific understanding of the general public by not including interpretive signage in the area.

Cumulative Impacts

None of the reasonably foreseeable projects in the planning area are anticipated to cumulatively impact the NNL. Therefore, no cumulative impacts are anticipated under any of the alternatives.

3.20 TRIBAL INTERESTS

3.20.1 Key Points

- Contemporary Tribes maintain connections to locations and resources within the Monument for traditional and spiritual uses.
- Reducing the potential for impacts on Tribal interests hinges upon honoring the obligation to consult with federally recognized Tribes during the planning process and for all undertakings that have the potential to impact Tribal interests.

3.20.2 Affected Environment

Native American people have lived in the region containing the Monument for at least 12,000 years, using lands in the planning area for hunting, fishing, plant gathering, trade and exchange, and other cultural, social, and religious activities. Historically, these Tribes used numerous places within the planning area for natural resources foraging, hunting subsistence, habitation, travel routes, and spiritual and religious ceremonies. Some of these places may be documented traditional cultural properties or sacred sites that

the BLM is aware of, while others are known only to Tribal members. Practices that continue today include, but are not limited to, visiting these areas for plant and mineral gathering, traditional camp and ceremonial sites, and burial sites.

Thirteen federally recognized Tribes in the region continue to have ancestral and cultural ties to the lands that are now the Monument and have expressed interest in certain undertakings within the Monument. Following are the Tribes with interests in the Monument:

- Comanche Indian Tribe
- Fort Sill Apache Tribe of Oklahoma
- Hopi Tribe of Arizona
- Kiowa Tribe of Oklahoma
- Mescalero Apache Tribe
- Navajo Nation
- Pueblo of Acoma
- Pueblo of Isleta
- Pueblo of Laguna
- Pueblo of Tesuque
- Pueblo of Ysleta del Sur
- Pueblo of Zuni
- White Mountain Apache Tribe

Additionally, two non-federally recognized Indigenous communities reside near the Monument that may have historical and present connections with locations and resources: the Piro-Manso-Tiwa Tribe and the Tortugas Pueblo. Both groups reside in the Las Cruces area and are a composite of several Tribes that resided in the area at Spanish contact, or they moved to the area following the Pueblo Revolt of 1680.

The BLM conducts government-to-government consultations with the above-named federally recognized Tribes in accordance with legal and regulatory guidelines, including Section 106 of the National Historic Preservation Act; the American Indian Religious Freedom Act; the Native American Graves Protection and Repatriation Act; Executive Order 13175, Consultation and Coordination with Indian Tribal Governments; the president's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments; Joint Secretarial Order 3403 on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters; BLM Instruction Memorandum 2022-11, which provides direction for implementing provisions of Joint Secretarial Order 3403; BLM Handbook H-1780-1, Improving and Sustaining BLM-Tribal Relations (BLM 2016b); and BLM Manual 1780, Tribal Relations (BLM 2016c). An up-to-date summary of outreach and communication with federally recognized Tribes is presented in **Chapter 4**, Consultation and Coordination.

The BLM reached out to the federally recognized Tribes listed above in May 2017 to initiate communication regarding the Monument planning process. In December 2021, the BLM contacted the Tribes to invite them to participate in this RMP/EIS as cooperating agencies. The BLM has also coordinated with the Piro-Manso-Tiwa Tribe and the Tortugas Pueblo for the current planning effort and other projects in the LCDO's administrative boundaries in a non-government-to-government relationship

because they have historical and cultural ties to the lands in the planning area. Additional information is available in Sections 2.3.1 and 3.20, Tribal Interests, of the AMS (BLM 2022a).

3.20.3 Environmental Consequences

Issue 1: How would changes in visual resources, changes in ground-disturbing activities, and increases in allowable activities or visitation impact areas and resources of Tribal importance, such as cultural and sacred sites, traditional cultural properties, and significant plant communities?

Summary of Analytical Methods

Effects on Tribal interests are known through direct Tribal consultation between the BLM and affected Tribes. In analyzing the impact of proposed management directions on areas of Tribal importance, the best available scientific literature and GIS data for the four alternatives (Alternatives A–D) were compared. Because the nature and extent of areas and resources of Tribal importance are not known, potential impacts on vegetation, minerals, cultural, and visual resources are used as proxies in this analysis. The consultation process affords both Tribes and the BLM opportunities to identify sites, interests, and values of Tribal importance and to identify mitigations and avoidance and protective measures to preserve Tribal interests. The analysis area described in this section is the decision area (BLM-administered lands). The analysis covers from the time of the RMP's implementation through the life of the plan.

The action alternatives represent programmatic decisions; therefore, they would have no direct effects on Tribal interests. Potential effects would be considered indirect effects because they would occur later in time and at the site-specific level. At the programmatic level of an RMP, consequences are discussed qualitatively.

Indicators

- Broad changes to views or visual resources that could adversely impact ceremonial activities or sacred sites, if present
- Ground-disturbing activities that could impact resources of Tribal importance, such as cultural resources or plant species
- Increases in allowable activities or visitation that could increase the potential for impacts on resources of Tribal importance

Assumptions

- The BLM has the responsibility to ensure that meaningful consultation and coordination concerning Tribal treaty rights and trust resources are conducted on a government-to-government basis with federally recognized Tribes. The BLM has an obligation to consult with federally recognized Tribes during the planning process and for all undertakings that have the potential to impact Tribal resources.
- Sacred sites and traditional cultural properties are in the decision area, but exact locations and uses are unknown and can only be identified through consultation.
- The BLM does not know the extent of current Tribal practices and trends involving natural resource use and spiritual and religious ceremonies in the planning area.
- Protecting cultural resources and certain vegetation communities, which may have special significance in Indigenous communities, across alternatives would provide protections to traditional use areas and tribally important areas and resources.

- Tribes historically used numerous places in the planning area for habitation, foraging, hunting subsistence, and spiritual and religious ceremonies. Practices that continue today include Tribal groups visiting rock art sites, burial areas, and traditional camp and ceremonial sites, as well as gathering plants and minerals for traditional use.
- Impacts on areas and resources of Tribal interest and the severity of those impacts depend on the perspective and context of the Tribe, affected communities, or individuals. Impacts are highly subjective and depend on what is economically, environmentally, culturally, or spiritually important to affected Tribes and individuals.

Impacts Common to All Alternatives

Under all alternatives, continued consultation and coordination with federally recognized Tribes under Section 106 of the National Historic Preservation Act for any federal undertaking that has the potential to impact Tribal interests would allow for avoidance of impacts on resources of importance to Tribes.

Under all alternatives, the Dripping Springs Natural Area would continue to be closed to grazing. This would reduce the potential for impacts on resources of importance to Tribes from ground disturbance associated with livestock trampling, crowding, and range facilities. Impacts on resources of importance to Tribes could increase due to increased visitation rates.

Under all alternatives, the Monument's entire area (**Table 2-1, Appendix A, Figure 2-4**, Alternatives A, B, C, and D: Minerals) would continue to be withdrawn from mineral entry. This would continue to eliminate the potential for impacts on resources of importance to Tribes from ground disturbance by mineral resource development. Additionally, the casual collection of minerals, petrified wood, and fossils would be prohibited in all areas of the Monument. This would continue to limit the potential for impacts on resources of Tribal importance if there is overlap between these resources.

Under all alternatives, the potential impacts on cultural resources from ground disturbance within ROWs are similar. Continued adherence to existing laws and policies would work to protect culturally significant resources from ground-disturbing activities in these areas.

Under all alternatives, Kilbourne Hole would remain a designated NNL. This would continue to reduce the potential for impacts on resources of importance to Tribes in this 5,460-acre area (**Table 2-1, Appendix A, Figure 2-26**, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks) by reducing the amount of potentially ground-disturbing activities that can occur there.

Under all alternatives, 239,596 acres of land (**Table 2-1, Appendix A, Figure 2-26**, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks) within the Monument would remain designated as wilderness. This would continue to reduce the potential for impacts on resources of importance to Tribes from ground disturbance in these areas by reducing the number of potentially ground-disturbing activities that can occur there.

Alternative A

Under Alternative A, the goals and objectives for BLM-administered lands and mineral estate would remain the same. Allocations and restrictions pertaining to activities such as recreation, travel management, and livestock grazing would also remain as they are currently. The BLM would continue to manage three ACECs and one RNA (**Appendix A, Figure 2-22**, Alternative A: Areas of Critical Environmental

Concern and Research Natural Areas). Additionally, the BLM would continue to manage one NHT (**Appendix A, Figure 2-25**, Alternatives A, B, C, and D: Trails), one NNL (**Appendix A, Figure 2-26**, Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks), and 10 designated wilderness areas (**Table 3-58**). The BLM would also continue to manage two SRMAs (**Appendix A, Figure 2-5**, Alternative A: Special Recreation Management Areas).

Under Alternative A, the BLM would consult with the New Mexico SHPO and Tribes for any new ground-disturbing activities associated with livestock grazing. This would continue to reduce impacts from ground-disturbing activities, such as range improvements.

Ongoing management and current specially designated lands within the Monument under Alternative A would benefit cultural resources and vegetation potentially important to Tribes by decreasing the potential for impacts, such as ground disturbance, increased visitation, and broad changes to visual resources.

Action Alternatives (Alternatives B through D)

Under all action alternatives, the BLM's responsibility to consult with Tribes and the New Mexico SHPO on any Section 106 or federal undertaking that may have the potential to affect cultural resources and Tribal interests is explicit. This language is more inclusive of potential future undertakings than under Alternative A, and it would better serve to protect Tribal interests. Under all action alternatives, the BLM also has the management direction to engage with Tribes at the earliest possible point in project development to ensure Tribal concerns or input are taken into consideration for undertakings that may affect their interests. This would provide more opportunity to address concerns these communities might have regarding specific actions, further reducing the potential for broad changes to visual resources and ground-disturbing activities that would impact cultural resources or vegetation, or an increase in allowable activities and visitation that could negatively impact resources of importance to Tribes.

Unlike Alternative A, as part of consultation with Native American Tribes under all action alternatives, there is a management direction to conduct government-to-government consultations with Native American Tribes where traditional cultural properties, sacred sites, and other traditional use areas would be identified to ensure they are adequately protected and managed. During consultation, there would be coordination on opportunities to educate the public about Tribes in the planning area, including signage, educational materials, and workshops or programs on the importance of protecting Tribal and cultural sites. This would reduce potential for impacts on resources of importance to Tribes from increased recreation and visitation.

The overall acres of designated wilderness, NNLs, RNAs, and national scenic and historic trails would be the same across all action alternatives (see **Table 2-1**); however, the acreage designated as ACECs would vary among them. The greatest acreage of ACECs would be designated under Alternative B, then Alternatives A, C, and D in that order (71,359 acres, 64,073 acres, 38,085 acres, and no acreage, respectively; see **Appendix A, Figures 2-22, 23, and 24**, and **Table 2-1**).

Despite the change in ACEC designations, protections afforded to Tribal interests through protections against ground disturbance or visual changes in these areas would not differ substantially across the action alternatives. This is because the areas not designated as ACECs would remain designated wilderness, and allowable uses would be similar regardless of the total ACEC acreage. One exception would be in the Doña Ana Mountains ACEC, which would be closed to OHV use under Alternative B. Because of this,

resources of potential interest to Tribes would be more protected from ground disturbance in that area under Alternative B, when compared with Alternative A and the other alternatives.

The action alternatives would all manage the same acreage as VRM Classes I and II (244,122 acres of VRM Class I and 252,467 acres of VRM Class II, compared with 241,070 acres of VRM Class I and 41,099 acres of VRM Class II under Alternative A). Compared with to Alternative A, the action alternatives would all provide greater potential protection against large visual changes in the Monument. However, because Proclamation 9131 prohibits many uses in the Monument, such as mineral entry or new ROW developments, the potential for large visual changes would not vary substantially across alternatives, despite the changes in VRM class designations.

Unlike under Alternative A, under all action alternatives, the entire Monument would be closed to grazing by domestic sheep and goats. The BLM would not only consult with the New Mexico SHPO and Tribes for any new ground-disturbing activities associated with livestock grazing, as under Alternative A, but the BLM would also consult with them when livestock grazing may affect cultural resources and Tribal interests. This more inclusive management would further reduce the potential impacts on Tribal interests in these areas related to grazing, such as large visual changes. This would reduce the potential for impacts on resources of importance to Tribes from broad changes to visual resources or ground disturbance associated with livestock trampling, crowding, and construction of range facilities.

Increases in allowable activities or visitation that could increase the potential for impacts on resources of Tribal importance are directly linked to opportunities for recreation and travel or any restrictions placed on them. Under Alternative B, the BLM would provide opportunities for recreation and travel with the most restrictions. This is due to more areas closed to OHV use (**Appendix A, Figure 2-18**, Alternative B: Transportation and Access) and covered by SRMA designations (see **Table 2-1**) than under any other alternative. Under Alternative C, the BLM would provide opportunities for recreation and travel with more restrictions than under Alternative A due to areas closed to OHV use and covered by SRMA designations (see **Table 2-1**), but with fewer restrictions than under Alternative B (**Appendix A, Figure 2-19**, Alternative C: Transportation and Access). Under Alternative D, the BLM would provide opportunities for recreation and travel with the fewest restrictions under any other alternative, including Alternative A, due to areas closed to OHV use and covered by SRMA designations (see **Table 2-1** and **Appendix A, Figure 2-20**, Alternative D: Transportation and Access).

Compared with Alternative A, Alternative B, followed by Alternative C, would result in fewer overall impacts on resources of importance to Tribes from increases in allowable activities or visitation. This reduction in impacts would be due to the increase in restrictions on access and resource uses.

Cumulative Impacts

The cumulative impacts analysis area for Tribal interests includes the entire planning area, regardless of surface or mineral ownership. Past and present actions that have likely impacted Tribal interests are broad changes to visual resources, travel off designated routes, ground-disturbing activities, recreation, erosion, and wildfire. Reasonably foreseeable future actions with the potential to affect resources of importance to Tribes are similar to the past and present actions; they include improvements to roads and construction of new visitor facilities, such as those proposed at Dripping Springs (**Table 3-1**). These actions have the potential to negatively impact resources of importance to Tribes through ground disturbance, increased

visitation, and broad changes to visual resources. However, the extent to which these impacts will occur depends on the project specifics.

Proposed management under Alternative B would be the most restrictive toward resource use and allowed activities, which would reduce the contribution to cumulative impacts on resources of importance to Tribes in the planning area. This is because management actions under Alternative B would designate the largest amount of land as closed to OHV use and managed as SRMAs (see **Table 2-1**). These designations would permit the least ground-disturbing actions and visual resource impacts. These designations also would encourage the smallest amount of recreational resource use among the alternatives, which would limit visitation.

The potential contribution to cumulative impacts on resources of importance to Tribes would be greater under Alternatives A and C; however, the highest potential contributions to impacts on resources of importance to Tribes would occur under Alternative D. This is due to the least amount of area that would be closed to OHV use and managed as SRMAs (see **Table 2-1**). These changes would result in an increased potential for impacts on resources important to Tribes because of the potential for ground and vegetation disturbance through increased visitation, and broad changes to visual resources.

3.21 SOCIAL AND ECONOMIC CONDITIONS

3.21.1 Key Points

- Regional jobs and income associated with recreation, livestock grazing, and BLM expenditures would be supported under all alternatives.
- Under all alternatives, recreation consumer surplus value would be supported. Values associated with quiet recreation experiences would likely increase under Alternatives B and C, while values associated with more developed motorized recreation experiences would be enhanced under Alternative D, as compared with Alternative A.
- Under all alternatives, the Monument's designation language and areas managed to preserve wilderness character per the Dingell Act would continue to support values associated with special designation areas in the region.

3.21.2 Affected Environment

This section includes a discussion of baseline conditions and the analysis of potential impacts of management alternatives. It addresses social, cultural, and economic conditions and trends in the study area, which is defined below. These conditions and trends affect current and future uses of resources on BLM-administered lands. Conversely, decisions made by the BLM in the planning process may have social, cultural, and economic impacts on lands within the study area.

A study area for the assessment of current social and economic conditions and trends is defined as the area where social and economic conditions may affect or be affected by the BLM's land use decisions. This area typically includes all counties that overlap the planning area (that is, the area in which management decisions will be applied), as well as any additional counties with important social or economic influence (that is, counties with population centers adjacent to the planning area). The socioeconomic study area consists of Doña Ana and Luna Counties, New Mexico, and El Paso County, Texas. Given El Paso County's population and proximity to the Monument, the BLM assumes there are social and economic ties to this

county; therefore, it is relevant to include in the study area. The study area is shown below in **Figure 3-16, Socioeconomic Study Area**.

This section incorporates by reference the 2023 OMDPNM Socioeconomic Baseline Report (BLM 2023c). Additional information is available in Sections 2.3.3 and 3.22, Social and Economic Conditions, of the AMS (BLM 2022a).

This section provides demographic information to characterize social and economic conditions, however, please refer to **Section 3.22, Environmental Justice**, for environmental justice specific demographic information.

Demographic Conditions

Population and Migration

Historical and projected population growth are important socioeconomic indicators. This is because they aid in anticipating the demand for public lands and provide context for how land use planning changes could affect the local population.

Table 3-59, below, shows the historical and projected population estimates for the three study area counties and the states in which the study area resides. The 2020 total study area population was 1,107,375, with El Paso County comprising 78.2 percent of the total population (US Census Bureau 2021; UNM 2020; Texas Demographic Center 2022). The projected population growth from 2020 to 2040 is anticipated to be highest in El Paso County at 7.53 percent; this is lower than the state rate of 23.2 percent (US Census Bureau 2021; UNM 2020; Texas Demographic Center 2022). In contrast, Doña Ana County is projected to grow at 6.26 percent, as compared with the New Mexico state rate of 1.7 percent (US Census Bureau 2021; UNM 2020; Texas Demographic Center 2022). Luna County is anticipated to continue trends over the past decade, with a population decrease of 8.57 percent from 2020 to 2040 (US Census Bureau 2011, 2016, 2021; UNM 2020; Texas Demographic Center 2022).

**Table 3-59
Historical and Projected Population**

Geography	Historical Population ¹			Projected Population ²		Projected Change 2020 to 2040 ³	
	2010	2015	2020	2030	2040	Total Change	Percentage Change
State and Study Area Overall							
New Mexico	2,013,122	2,084,117	2,097,021	N/A	2,136,414	2,132,755	35,734
Texas	25,145,561	27,469,114	29,677,668	29,874,788	32,912,882	36,807,213	6,932,425
Three-County Study Area	1,027,569	1,076,105	1,107,375	N/A	1,160,132	1,195,536	88,161
Counties in the Study Area							
Doña Ana	201,670	213,963	217,696	N/A	226,879	231,331	13,635
Luna	25,252	24,789	24,022	N/A	23,320	21,963	(-)2,059
El Paso	800,647	837,353	865,657	876,236	909,933	942,242	66,006




¹ Sources: US Census Bureau 2011, 2016, 2021 for New Mexico state and county figures. Texas Demographic Center 2022 for Texas state and county figures.

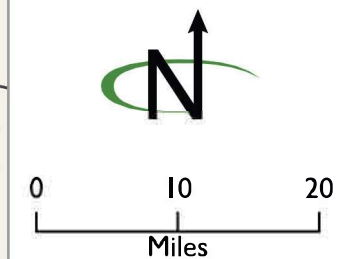
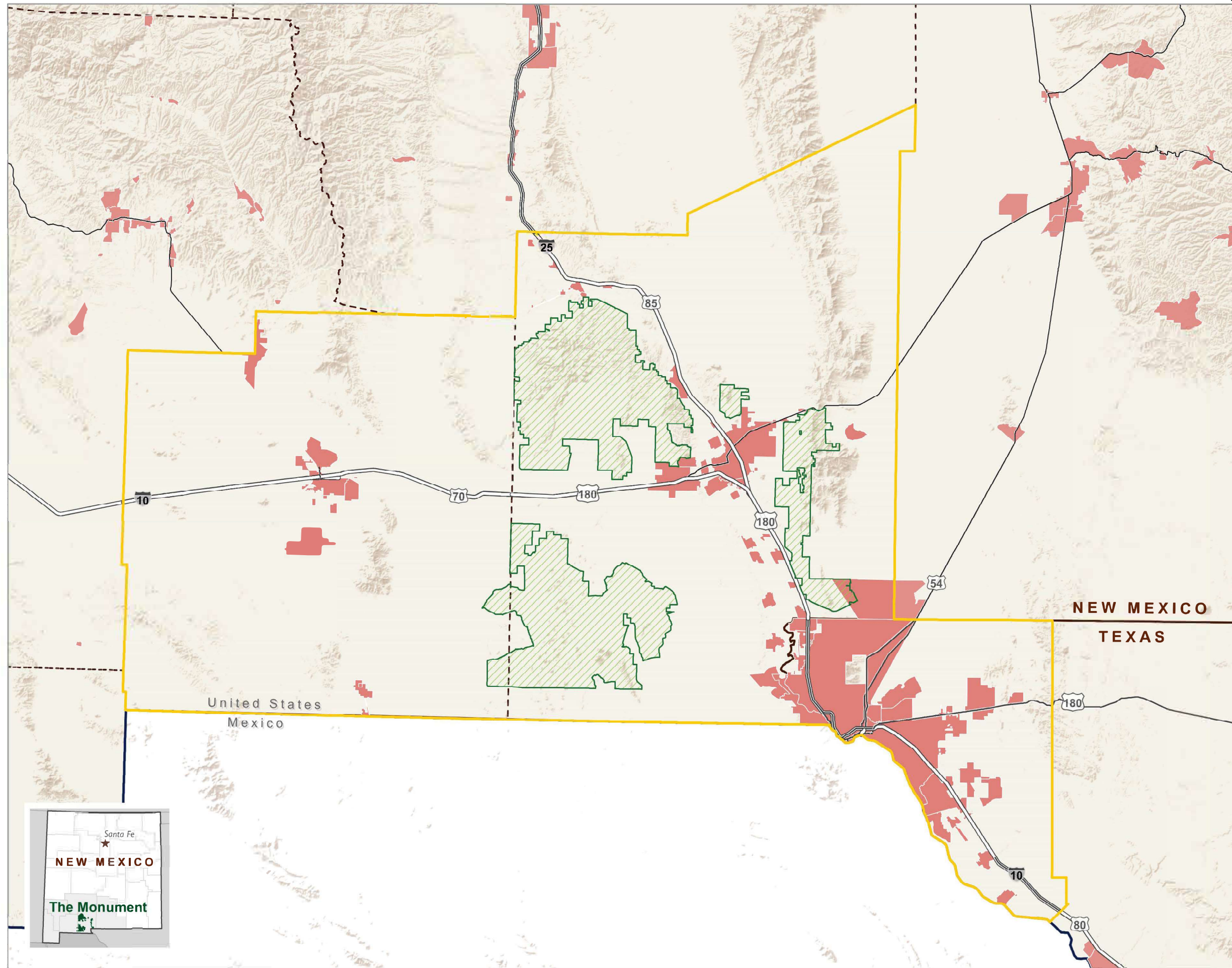
² Sources: UNM 2020 for New Mexico state and county figures. Texas Demographic Center 2022 for Texas state and county figures.

³ Projected changes were calculated from 2020 for New Mexico and its counties, and from 2022 for Texas and its counties. (N/A) = not available. 2022 estimates were not available for New Mexico.



Figure 3-16
Socioeconomic Study Area

-  Population center
-  Organ Mountains - Desert Peaks National Monument
-  Study area



Source: BLM GIS 2022, U.S. Census GIS 2022, Department of the Interior, Bureau of Land Management, Las Cruces District Office December 29, 2023, F0416_OrganMtnsRMP_Socio.aprx
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.
 Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

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Community Indicators

Educational attainment is one measure of the knowledge and skills individuals in the local population can bring to the workforce. In general, higher educational attainment correlates with higher median earnings and higher employment rates (BLS 2021).

Table 3-60, below, displays information on educational attainment for the three study area counties and the states in which the study area resides. In the study area, in the year 2021, Doña Ana County had the highest rate of residents who have a bachelor’s degree (17.5 percent); this is higher than the state of New Mexico average rate of 15.8 percent (US Census Bureau 2022a). El Paso County is slightly below the average for the state of Texas (16.6 as compared with 20.4 percent) (US Census Bureau 2022a). Luna County had the lowest rate of those with a bachelor’s degree, at 7.5 percent. In addition, approximately 29 percent of people in this county have no high school degree (US Census Bureau 2022a).

**Table 3-60
Educational Attainment for Population 25 or Older (Percentage of Total) (2021)**

Geography	No High School Degree	High School Graduate	Associate’s Degree	Bachelor’s Degree	Graduate or Professional Degree
State and Study Area Overall					
New Mexico	13.2	26	8.9	15.8	12.7
Texas	15.1	24.5	7.5	20.4	11.2
Three-County Study Area	20.2	23.6	8.8	16.5	8.9
Counties in the Study Area					
Doña Ana	19.3	21.5	8.3	17.5	12.6
Luna	29.2	35.6	5.3	7.5	4.5
El Paso	20.2	23.8	9.0	16.6	8.1

Source: US Census Bureau 2022a

Table 3-61, below, displays information on language spoken at home for the three study area counties and the states in which the study area resides. The language spoken at home can provide important context to guide community outreach efforts and to identify the possible need to develop materials in other languages. In 2021, El Paso County had the highest rate of residents who speak English less than very well (30.1 percent); this is more than double the rate for the state of Texas (13.1 percent) (US Census Bureau 2022b). Doña Ana and Luna Counties had rates of 16.1 and 17.2 percent for those who speak English less than very well, as compared with the state of New Mexico rate of 8.7 percent (US Census Bureau 2022b).

**Table 3-61
Language Spoken at Home, Population 5 or Older as a Percentage of Total (2021)**

Geography	Speak only English	Speak a Language Other than English	Speak English Less than Very Well
State and Study Area Overall			
New Mexico	67.0	33.0	8.7
Texas	64.9	35.1	13.1
Three-County Study Area	35.3	64.8	27.0

Geography	Speak only English	Speak a Language Other than English	Speak English Less than Very Well
Counties in the Study Area			
Doña Ana	51.7	48.3	16.1
Luna	48.0	52.0	17.2
El Paso	30.7	69.3	30.1

Source: US Census Bureau 2022b

The age of a population can influence the social services needed to support that community. In terms of public land use, the age of a community can influence the type and location of land uses and the recreational activities in which residents may be most interested in participating. In the study area, Luna County had the highest median age (36.5 years) in 2021 (US Census Bureau 2022c). El Paso County had the lowest median age at 32.6 years. Doña Ana County’s median age was 33.4 years (US Census Bureau 2022c). All area counties have a younger median population than that of their comparative states. New Mexico’s median age is 38.3, and Texas’s median age is 35.0 (US Census Bureau 2022c; **Table 3-62**).

Table 3-62
Age as a Percentage of Total Population (2021)

Geography	Under 5 (%)	5–19 (%)	20–44 (%)	45–64 (%)	Over 65 (%)	Median Age
State and Study Area Overall						
New Mexico	5.9	19.8	32.4	24.5	17.4	38.1
Texas	7.0	21.5	35.3	23.6	12.6	34.8
Three-County Study Area	7.3	22.5	37.8	21.7	13.1	—
Counties in the Study Area						
Doña Ana	6.4	21.9	34.7	21.3	15.7	33.3
Luna	7.3	21.4	29.0	21.8	20.5	37.2
El Paso	7.5	22.6	35.8	21.8	12.1	32.4

Source: US Census Bureau 2022c

Housing

Land management decisions can affect and be affected by migration patterns to and from a region. These movements of people can, in turn, affect the demand for housing. It is therefore important to understand the supply of housing in the study area. **Table 3-63** shows housing occupancy, housing tenure, vacancy rates, and housing types in the study area counties and the states in which they reside. In 2021, Doña Ana and El Paso Counties had average occupancy rates higher than the average rates of their respective states, while Luna County was below the average for the state of New Mexico.

High vacancy rates can be an indication of a distressed local economy or a distressed real estate market. As is the case for El Paso County, urban areas generally have higher rates of rental housing and multifamily types of units (such as apartment buildings) and lower seasonal, recreational, or occasional-use housing. High percentages of mobile homes often occur in lower-income areas. There is a notably high percentage of mobile homes for Luna County (32.7 percent), as compared with other portions of the study area.

Table 3-63
Housing Tenure and Occupancy Characteristics, 2020 (Based on 5-year Estimates)

Geography	Total Housing Units	Housing Occupancy and Tenure (%)					Units (%)	
		Occupied	Owner Occupied	For Seasonal, Recreational, Occasional Use	Homeowner Vacancy Rate	Rental Vacancy Rate	Single Unit, Detached	Mobile Homes
State and Study Area Overall								
New Mexico	937,397	85.1	68.2	4.7	1.5	7.3	64.4	16.3
Texas	11,433,880	89.6	62.4	1.9	1.3	7.6	65.0	6.8
Three-County Study Area	414,755	90.1	63.4	1.2	1.6	5.3	65.4	9.5
Counties in the Study Area								
Doña Ana	89,119	89.7	64.9	2.0	1.2	7.1	58.6	20.2
Luna	11,462	78.9	63.0	1.7	2.6	2.1	54.0	32.7
El Paso	314,174	91.7	63.1	1.0	1.7	8.7	67.7	5.7

Sources: US Census Bureau 2022d, 2022^e

Table 3-64 provides data for the cost of housing in the study area. In 2021, housing values (the median value of owner-occupied units) for all counties were lower than their respective state's median values. The housing value moderately correlates with county size, as measured by the total number of housing units shown in the previous table. For instance, the largest counties by population, El Paso and Doña Ana Counties, have higher median values, while Luna County has the lowest median values (less than half of the state of New Mexico's median).

Table 3-64
Housing Costs, 2021 (Based on 5-year Estimates)

Geography	Median Value of Owner-occupied Units	Percentage of Owner-occupied Units ¹	Median SMOC ²	SMOCAPI 35% or More ³ (%)	Gross Rent for Occupied Units Paying Rent ⁴
State and Study Area Overall					
New Mexico	\$184,800	53.1	\$1,359	22.3	\$897
Texas	\$202,600	57.0	\$1,747	20.0	\$1,146
Three-County Study Area	\$127,500	54.7	\$1,187	—	\$746
Counties in the Study Area					
Doña Ana	\$162,200	53.7	\$1,271	20.5	\$785
Luna	\$88,800	45.6	\$931	27.6	\$545
El Paso	\$131,500	55.2	\$1,360	25.6	\$908

Source: US Census Bureau 2022e

¹ Percentage of owner-occupied housing units with a mortgage

² SMOC (selected monthly owner costs) includes mortgage payments, real estate taxes, insurance, utilities, fuels, and condominium fees.

³ SMOCAPI: Selected monthly owner costs as a percentage of household income

⁴ Gross rent: Contract rent plus estimated cost of utilities and fuels (if paid by the renter)

Table 3-64 also includes data on the affordability of housing in each county, specifically the cost of owning or renting a home relative to homeowner income. The table shows the percentage of owner-occupied homes with mortgages for which the ownership costs exceed 35 percent of the homeowner's income. El Paso and Luna Counties have a similar value for the proportion of residents whose selected monthly owner costs (mortgage payments, real estate taxes, insurance, utilities, fuels, and condominium fees) are

greater than 35 percent of the household income; these proportions are higher than the respective state averages. This may be a result of a low availability of housing units (refer to **Table 3-63**).

Historical and Social Setting

Understanding an area’s geographic features, history, and culture provides valuable insight into how events or changes—potentially including BLM management actions—may affect the livelihoods and quality of life of the area’s residents. The following section provides brief summaries of the social setting for each of the three study area counties.

The study area has a rich character and heritage that span thousands of years of human history. Throughout this time, the study area has been a diverse crossroads of different peoples and cultures that have chosen to make this land their home. More detailed information on the study area’s historical setting can be found in **Section 3.13**, Cultural Resources, and the BLM’s 2023 OMDPNM Socioeconomic Baseline Report (BLM 2023c).

Communities

Doña Ana County—Doña Ana County shares a border with Texas and Mexico, with a total area of over 3,800 square miles. It contains numerous prominent geographical features, most notably the Mesilla Valley, which is the floodplain of the Rio Grande. It is the second-most populated county in New Mexico, with a population exceeding 219,000. It has five incorporated municipalities (UNM 2020; Doña Ana County 2012b). These municipalities include suburban communities, growing communities, and agricultural lands. Las Cruces, the county seat and second-most populated municipality in New Mexico, is the most urban of the municipalities. It provides a variety of amenities and services typically found in larger communities, including New Mexico State University (Doña Ana County 2012b, 2015).

The unincorporated portion of Doña Ana County is characterized by agricultural and dairy farms near the Rio Grande and undeveloped desert and mountains. The local residents value the natural beauty, recreation opportunities, and ranching activities provided by the landscape. The US Department of Housing and Urban Development and the US EPA have designated 37 communities in Doña Ana County as colonias.¹⁵ The colonias range from rural communities to neighborhoods within cities; however, many are historic developments (Doña Ana County 2012b, 2015). This county encompasses White Sands National Park, the Monument, and the southwest corner of the White Sands Missile Range. The area attracts those interested in hunting, hiking, biking, and participating in other recreational activities. The county is a leading producer of chili peppers, onions, and pecans. Key economic sectors include health care and social assistance, education, retail trade, and tourism (Data USA 2020a).

Luna County—Located in New Mexico’s southwest corner, Luna County is 2,965 square miles and shares a 54-mile border with Mexico. It features three mountain outcrops that compose the southern extension of the Rocky Mountains. Part of the Potrillo Mountains and the Whitehorn Wilderness protrude into Luna County. Luna County contains a small portion of the Monument and is home to people who recreate in the Monument. Luna County has a population exceeding 24,000 (UNM 2020; Luna County 2012).

¹⁵ Colonias refers to rural communities with a population of 25,000 or less that are located within 150 miles of the US–Mexico border that have been designated as a colonia by the municipality or county due to a lack of a potable water supply; a lack of adequate sewage systems; or a lack of decent, safe, and sanitary housing ([SNMEDD 2022](#)).

Luna County is a large rural county with a ranching and farming heritage. Deming, located along Interstate 10 near the county's geographic center, is the county seat and main population center. A number of historic sites are located in Deming, including sites registered on the National Register of Historic Places. The only other incorporated municipality in the county is Columbus, which lies 3 miles north of Palomas, Mexico (City of Demming 2017).

It is estimated that more than half of Luna County residents live within the city of Deming, and most others either live in colonias, rural agricultural areas, or the incorporated village of Columbus (Growing Food Connections 2016). According to the 2022 Luna County Comprehensive Plan, there are nine designated colonias in Luna County (Luna County 2022). Colonias within the Luna County are generally characterized by subdivisions with inadequate water, wastewater, housing and roads.

This county is a transportation hub with three railroads, an interstate highway, and an airport. A large, modern International Port of Entry, which is located 3 miles south of the Luna County Village of Columbus on State Highway 11, provides 24-hour per day service between the Mexican state of Chihuahua and the US market for a variety of agricultural products. Luna County has a successful and proud heritage in ranching, farming, and the agricultural-processing industry. Key economic sectors include health care and social assistance, education, retail trade, and tourism (Data USA 2020b).

El Paso County—El Paso County is the westernmost county of Texas and comprises 1,057 square miles of desert and irrigated land. The county is located on the Rio Grande and lies at the foothills of the Franklin Mountains. It shares a border with Doña Ana and Otero Counties, New Mexico, and Hudspeth County, Texas. With a population exceeding 870,000 in 2020, El Paso County is an urban center that allows for the delivery of a variety of goods and services for adjacent counties, especially those north of Interstate 10, the southernmost cross-country highway (UNM 2020; El Paso County 2022). El Paso County is home to Fort Bliss Military base and several universities, such as the University of Texas at El Paso.

The city of El Paso is the county seat and the county's largest population center with over 669,000 people. Roughly 85 percent of the county's residents live in the city of El Paso, while the remainder live in small municipalities, rural areas, and unincorporated townships along the US–Mexico border (El Paso County 2021). Smaller communities include Anthony, Canutillo, Clint, Horizon City, San Elizario, Socorro, and Vinton, Texas (El Paso County 2022). The largest industries in the county are health care and social assistance, retail trade, and education.

In El Paso County and other counties in Texas, colonias are characterized by substandard housing developments and limited infrastructure (TDCHA 2019). Due to differing definitions, estimating the population of residents of colonias can be difficult. A 2014 assessment by the Office of the Secretary of State's Colonia Initiatives Program estimated EL Paso County had 329 colonias with a population of 90,582 (TDCHA 2023). Colonia residents tend to be young, predominately Hispanic, low to very low income, and employed in low paying sectors (TDCHA 2023). More information on colonias is provided in **Section 3.22.2, Environmental Justice**.

Historic sites, landscapes, and structures, including the Mission Trail, also characterize the county (El Paso County 2019). The area's natural features make it an increasingly popular outdoor sports location, particularly for mountain biking, rock climbing, and all-terrain vehicle riding (El Paso County 2021). While there is no BLM-administered land in El Paso County, the county is near BLM-administered land and is a key population center that contributes to the study area's social and economic conditions.

Infrastructure and Public Services

As described in the 2023 OMDPNM Baseline Socioeconomic Report, public services that could potentially be affected by BLM management decisions include roads, law enforcement, fire and emergency medical response, healthcare facilities and services, schools, water and wastewater infrastructure, other utilities, and landfills.

Many factors affect the levels and quality of public services. These include physical factors such as infrastructure, facilities, and equipment (such as roads, fire stations, fire trucks; all of these require maintenance) and operational factors (for example, funding availability and the numbers of law enforcement officers or teachers).

More detailed information on infrastructure and public services in the study area can be found in Section 2.5 of the OMDPNM 2023 Baseline Socioeconomic Report (BLM 2023c). Key changes in social, economic, and environmental conditions have occurred in recent years that can affect public services and infrastructure, including those in the study area. Such changes range from the COVID-19 pandemic to increasing drought and wildfire risks.

In general, the population centers within the study area are well served; however, throughout New Mexico many rural areas often have less availability of public services. For communities in the study area where less availability of and access to public services and infrastructure existed pre-pandemic, the presence of changing economic and environmental conditions can further limit such access and availability.

Many rural parts of New Mexico are underserved by health services, and doctor recruitment efforts often take place in these areas. Nearly all of the 33 counties in New Mexico, including Doña Ana and Luna Counties, are designated as health professional shortage areas by the Health Resources and Services Administration in all three categories of providers—primary care, dental, and mental health (NM Department of Health 2018). This indicates a shortage of primary care providers in the study area. Therefore, pressures on the health care industries and facilities resulting from the COVID-19 pandemic can further hinder adequate access to emergency medical services and other health services, particularly in rural areas that face existing health care shortages.

Public services have a strong relationship to the quality of life. For instance, the availability of health care services (doctors and hospitals) has clear implications for the population's health and therefore the quality of life of its members. The next section partially addresses this relationship through quality-of-life ratings that include public service-related components.

Stakeholders

The study area includes groups and individuals who have similar values but who may not represent a physical community or region. Rather, they represent a specific group for whom management of public land or minerals is of particular interest.

Different stakeholder organizations and individuals can have varying interests in the use and management of resources on BLM-administered lands. These groups have distinct sets of attitudes, beliefs, values, opinions, and perceptions about public resources and the effects of various management policies and actions. These views reflect different cultural as well as economic linkages people have to public lands. The subsections below identify and characterize broad categories of stakeholders to this planning effort.

One source of information utilized is focus group reports on stakeholder values. A set of recreational preference focus groups conducted in 2016, provides documentation specific to the values associated with recreation (Casey et al. 2017). Also, comments received during the public scoping period for the OMDPNM RMP/EIS form the basis for identifying and describing these categories. See the OMDPNM RMP/EIS scoping report and comment analysis report for additional documentation of stakeholder views (BLM 2023d). The OMDPNM Socioeconomic Baseline Report also contains a summary of socioeconomic workshops held in 2023 in conjunction with public scoping (BLM 2023c). These workshops were held to capture input from the diverse stakeholders within the study area on social and economic conditions, key values for local communities and to inform the development of this draft RMP/EIS (BLM 2023c).

Public comments received to date, including those from previous public outreach efforts associated with the TriCounty RMP/EIS, indicate stakeholders derive a range of values from BLM-administered land in the study area. These values, which are referred to broadly as “ecosystem service values,” are discussed in detail in **Section 3.21.2, Nonmarket Values and Ecosystem Services**. Ecosystem service values can be classified based on whether they can be tied to market activity or whether they are “nonmarket” in nature. These ecosystem service values can be further classified based on whether they involve actual use of a resource (either directly or indirectly) or whether they are not tied to any actual use of a resource (“nonuse values”). See **Nonmarket Values and Ecosystem Services**, below, for a detailed description of market/nonmarket and use/nonuse values.

The categorization of stakeholders is not meant to imply that all individuals and social groups fit neatly into a single category; many specific individuals or organizations may have multiple interests and would see themselves reflected in more than one stakeholder category. The point of categorization is to facilitate the impacts analysis phase of the planning process by allowing differentiation of social impacts based on broad differences in sociocultural linkages to public lands and peoples’ associated points of view.

Recreation Stakeholders

There are many types of recreational activities in the study area. It is important to recreation stakeholders that public land be available for activities such as hunting, rock hounding, bicycling, horseback riding, hiking, wildlife viewing, and special events. These stakeholders seek protection of areas with high recreation values because they contribute to the quality of life in southern New Mexico (BLM 2023c). They generally favor improved facilities in developed recreation areas, but many also advocate for protection of undeveloped areas for more primitive recreation. For many recreationists, the preservation of public land is critical to retaining the present quality of recreation in the study area.

For many recreation stakeholders, the preservation of ecosystem values and open space is important, to provide users with adequate opportunities for wildlife-related recreation. Some in this stakeholder group see OHV use as problematic. They favor development of OHV areas and route designations and the use of SRMAs to reduce conflicts between quiet and motorized recreation. For other recreation stakeholders, OHV recreation opportunities are important. They advocate for maintaining OHV access. They point out the local economic benefits provided by OHV users and the willingness of OHV users to pay fees to participate in their sport.

Livestock Grazing Stakeholders

These stakeholders believe that ranching and livestock grazing are essential components of the landscape and economy. They aim to support the livelihoods and traditions associated with grazing and ranching,

which they view as central to the stability, vitality, and values of local communities. Livestock grazing stakeholders are concerned with standardizing the management criteria for grass and forage consumption. They also are concerned with the designation of specific grazing areas. Livestock grazing stakeholders note that livestock operators have long-standing concerns about the health and productivity of the land. They are concerned with whether BLM management decisions will maintain a balance between grazing availability and water and riparian habitat quality (BLM 2023d).

Wildlife and Resource Conservation Stakeholders

Stakeholders in this category have a number of conservation objectives, but most believe broadly that protecting at-risk species and maintaining habitats and ecosystems for all species is a fundamental value and should be a high priority in public policy. Some advocate resource conservation for human as well as wildlife needs, pointing to the beauty and solitude values of unspoiled areas.

Wildlife movement corridors and special designations, such as areas of critical environmental concern, are especially important to these stakeholders. They believe large areas that are important for biodiversity and movement between wildlife habitats should be protected, and development activities should be located, phased, and concentrated to minimize disturbance to wildlife in these areas. These stakeholders favor designation of new protected areas and restrictions or stipulations on resource development when it overlaps with sensitive wildlife habitat.

These stakeholders see a number of threats to species and habitat protection and resource conservation generally. A major concern is fragmentation of large areas available for wildlife movement. They are also concerned about negative impacts on wildlife from increased human activity, noise, and disease exposure. Some of these stakeholders are concerned with livestock grazing's impacts on riparian areas, the spread of noxious weeds, and competition with wildlife for forage.

Military Stakeholders

White Sands Missile Range and Fort Bliss are within the study area. Land use planning decisions on BLM-administered land affect both installations; therefore, they maintain an active collaborative effort with the BLM. The Joint Land Use Study for Southern New Mexico is representative of the efforts the military has spearheaded to enhance regional land management policies and practices.

Tribal Stakeholders

As described in **Section 3.20**, there are 13 federally recognized Indian Tribes and two non-federally recognized Indian Tribes from across New Mexico, Texas, Arizona, and Oklahoma who have ancestral and cultural ties to the lands that are now the Monument. Public scoping comments received to date indicated Tribal knowledge and concerns that should be incorporated in the development of the RMP/EIS include but are not limited to: traditional uses of the land and guidance from local Indigenous communities to ensure the preservation of cultural resources, sacred sites, traditional foodways, and spiritual practices (BLM 2023d).

Economic Conditions

Income and Employment

Unemployment

The unemployment rate is a key economic indicator. A low rate generally indicates a functioning economy, while a high rate is a concern for the general economy and likely indicates that some individuals in the labor force are in economic distress due to the lack of work and associated income. Changes in the unemployment rate from year to year provide a good indication of the relative health of the economy over time.

Table 3-65 shows the annual unemployment rate from 2010 to 2022 for each study area county, as well as the comparison populations for New Mexico, Texas, and the US average. Within the study area, the county with the highest unemployment rate was Luna County, New Mexico, with approximately 10 percent in 2022 (US Department of Labor, BLS 2023a).

Table 3-65
Annual Unemployment Rate (2010–2022)

Year	Doña Ana County (%)	Luna County (%)	El Paso County (%)	New Mexico (%)	Texas (%)
2010	7.4	19.3	9.2	7.8	8.2
2011	7.3	19.5	9.8	7.2	8
2012	7.2	19.6	8.5	7	6.7
2013	7.5	18.9	8	6.9	6.3
2014	7.2	17.9	6.5	6.6	5.2
2015	7.4	17.5	5.2	6.6	4.5
2016	7.2	14.6	5	6.7	4.6
2017	6.7	13.9	4.7	6.1	4.3
2018	5.6	11.8	4.3	4.9	3.9
2019	5.8	12.3	3.8	4.9	3.5
2020	8	15.7	8.3	8.1	7.7
2021	6.6	15.2	6.2	6.8	5.7
2022	4.4	9.9	4.3	4.0	3.9

Source: BLS 2023a

Employment by County and Industry

Table 3-66 examines the overall trends in employment over the past 50 years. Since 2000, job growth has occurred in all study area counties, with the highest rate of growth in El Paso County (42.6 percent increase in employment) and the lowest rate of growth in Luna County (10.6 percent) (BEA 2021a). Data for 2020 indicate a loss of jobs since 2015 for all but El Paso County; however, this was likely due to temporary job reductions due to closures during the COVID-19 pandemic. Between 2020 and 2021, all counties experienced job growth, paralleling statewide trends. The data come from the Bureau of Economic and include wage and salary jobs (employees) and proprietors (the self-employed). Both full- and part-time jobs are included.

Table 3-66
Employment Trends 1970–2021 (Number of Jobs)

Year	Doña Ana County	Luna County	El Paso County	New Mexico	Texas
1970	27,080	4,395	149,223	398,899	5,045,435
1980	39,628	5,115	213,600	597,041	7,495,945
1990	57,771	6,413	267,889	761,396	9,242,899
2000	74,836	8,581	323,776	964,919	12,138,771
2015	99,925	9,845	422,308	1,092,255	16,414,591
2020	99,222	9,277	439,597	1,054,758	17,158,640
2021	102,222	9,494	461,729	1,087,348	18,276,115
Percent change 2000–2021 (%)	36.6	10.6	42.6	12.7	50.6

Source: BEA 2021a

When examined by industry, key economic sectors can be identified. **Table 3-67** displays the employment data by industry sector for the study area. Compared with the state average, service-related industries represent a smaller portion of the economy—in terms of employment—for Luna County (36.6 percent compared with 67.2 percent for New Mexico overall) (BEA 2022b). Doña Ana County was more similar to the state average (60.5 percent) as was El Paso County (68.3 percent compared with 71.5 percent for Texas) (BEA 2022b).

In 2021, the three nongovernment industry sectors with the highest percentage of total employment in Doña Ana County were health care and social assistance (17.0 percent), retail trade (9.0 percent), and accommodation and food services (7.7 percent). In Luna County, top sectors included retail trade (12.1 percent), manufacturing (9.5 percent), and accommodation and food services (7.8 percent). For El Paso County, top sectors included health care and social assistance (10.8 percent), retail trade (10.2 percent), and accommodation and food services (8.3 percent).

Wages by Industry

Wages and other employee compensation vary across industries. Each industry's contribution to income in a local economy is thus a function of both the number of jobs in the industry and the level of compensation. Small industries, as measured by jobs, may be disproportionately important to an economy if the compensation per job is high.

Table 3-68 presents industry average wages from the Bureau of Labor Statistics (BLS). The BLS wage data mainly reflect salaries and hourly wages. BLS data do not include income for business proprietors (the self-employed); thus, the data focus on the workers employed by private businesses and government entities.

The average 2021 wage across all industries was highest in El Paso County and lowest in Luna County. In terms of wage by sector, some sectors have notably different wages from the average. Some of the private employment sectors with the lowest wages, compared with total annual averages, included leisure and hospitality (56 to 61 percent below the total average wage for study area counties), and agriculture, forestry, fishing, and hunting (12 to 28 percent below the total average wage) (BLS 2022b). In contrast, construction (3 to 66 percent above the total average wage) and information (up to 60 percent above the total average wage) are sectors where wages are above annual averages (BLS 2022b).

Table 3-67
Employment by Industry (2021)

Industry	Doña Ana County		Luna County		El Paso County		New Mexico		Texas	
	Jobs	%	Jobs	%	Jobs	%	Jobs	%	Jobs	%
Total employment	102,222	100	9,494	100	461,729	100	1,087,348	100	18,276,115	100
Non-services-related industries	14,301	14.0	1,753	18.5	52,472	11.4	158,189	14.5	2,897,821	15.9
Farm	3,172	3.1	308	3.2	967	0.2	27,764	2.6	270,931	1.5
Forestry and agricultural services	1,129	1.1	(D)	(D)	481	0.1	5,715	0.5	63,733	0.3
Mining	228	0.2	(D)	(D)	518	0.1	24,290	2.2	316,530	1.7
Construction	6,464	6.3	547	5.8	31,325	6.8	67,245	6.2	1,289,423	7.1
Manufacturing	3,308	3.2	898	9.5	19,181	4.2	33,175	3.1	957,204	5.2
Services related	61,826	60.5	3,475	36.6	315,305	68.3	730,356	67.2	13,290,080	72.7
Utilities	320	0.3	82	0.9	1,598	0.3	4,621	0.4	59,858	0.3
Wholesale trade	1,817	1.8	105	1.1	14,168	3.1	23,201	2.1	652,452	3.6
Retail trade	9,150	9.0	1,152	12.1	47,220	10.2	110,598	10.2	1,709,148	9.4
Transportation and warehousing	4,039	4.0	400	4.2	29,091	6.3	37,011	3.4	996,392	5.5
Information	851	0.8	19	0.2	5,626	1.2	13,446	1.2	261,237	1.4
Finance	2,971	2.9	169	1.8	20,900	4.5	37,431	3.4	1,243,782	6.8
Real estate and rental and leasing	4,076	4.0	252	2.7	17,442	3.8	41,951	3.9	864,050	4.7
Professional and technical services	5,538	5.4	(D)	(D)	16,842	3.6	84,567	7.8	1,337,529	7.3
Management of companies	(D)	(D)	(D)	(D)	2,756	0.6	6,454	0.6	225,877	1.2
Administrative and waste services	(D)	(D)	(D)	(D)	35,988	7.8	57,800	5.3	1,249,373	6.8
Educational services	1,425	1.4	(D)	(D)	6,283	1.4	15,577	1.4	302,514	1.7
Health care and social assistance	17,351	17.0	(D)	(D)	49,771	10.8	136,632	12.6	1,744,911	9.5
Arts, entertainment, and recreation	1,619	1.6	118	1.2	5,204	1.1	23,261	2.1	292,674	1.6
Accommodation and food services	7,917	7.7	745	7.8	38,370	8.3	85,482	7.9	1,322,298	7.2
Other services	4,752	4.6	433	4.6	24,046	5.2	52,324	4.8	1,027,985	5.6
Government	20,575	20.1	2,040	21.5	93,952	20.3	198,803	18.3	2,088,214	11.4

Source: BEA 2022b

(D) Not shown to avoid disclosure of confidential information; estimates are included in higher-level totals.

**Table 3-68
Average Annual Wages by Industry (2021)**

Industry	Doña Ana County		Luna County		El Paso County		New Mexico		Texas		United States	
	Average wages (2022\$)	% Compared with total average wage	Average wages (2022\$)	% Compared with total average wage	Average wages (2022\$)	% Compared with total average wage	Average wages (2022\$)	% Compared with total average wage	Average wages (2022\$)	% Compared with total average wage	Average wages (2022\$)	% Compared with total average wage
Total	47,376	100	44,085	100	48,470	100	56,724	100	71,247	100	73,019	100
Private sector	42,168	-11	37,089	-16	44,156	-9	54,949	-3	72,463	2	73,471	1
Non-service industries	45,700	-4	41,549	-6	53,842	11	65,149	15	88,871	25	78,861	8
Natural resources and mining	34,093	-28	29,751	-33	43,774	-10	75,672	33	120,844	70	66,396	-9
Agriculture, forestry, fishing, and hunting	33,913	-28	29,423	-33	42,682	-12	39,117	-31	46,784	-34	45,080	-38
Mining (including fossil fuels)	44,108	-7	51,577	17	59,088	22	95,608	69	145,265	104	118,258	62
Construction	48,759	3	73,254	66	52,262	8	59,791	5	77,002	8	75,443	3
Manufacturing (including forest products)	51,611	9	37,119	-16	55,924	15	63,509	12	90,194	27	82,707	13
Services related	41,401	-13	34,919	-21	42,523	-12	52,917	-7	69,013	-3	72,327	-1
Trade, transportation, and utilities	41,016	-13	37,439	-15	46,741	-4	46,910	-17	64,643	-9	60,186	-18
Information	46,763	-1	70,718	60	59,702	23	78,061	38	121,206	70	164,863	126
Financial activities	57,507	21	42,084	-5	62,741	29	71,288	26	105,907	49	124,457	70
Business services	54,720	16	44,843	2	46,881	-3	78,597	39	93,835	32	97,269	33
Education and health services	43,934	-7	39,612	-10	44,709	-8	50,418	-11	59,237	-17	62,768	-14
Leisure and hospitality	20,823	-56	17,197	-61	20,057	-59	24,667	-57	27,324	-62	30,824	-58
Other services	33,560	-29	35,966	-18	35,244	-27	45,148	-20	50,060	-30	49,812	-32
Unclassified	N/A	N/A	N/A	N/A	37,820	-22	N/A	N/A	61,915	-13	79,012	8
Government	63,883	35	63,679	44	64,648	33	63,294	12	64,388	-10	70,384	-4
Federal government	98,371	108	111,859	154	89,295	84	90,577	60	91,750	29	96,342	32
State government	61,107	29	63,053	43	70,695	46	68,905	21	72,406	2	74,341	2
Local government	52,065	10	47,150	7	56,273	16	51,769	-9	57,731	-19	63,579	-13

Source: BLS 2022b

ND: Not disclosable—data do not meet BLS or state agency disclosure standards.

N/A: Not available.

Earnings by Industry

Earnings data provide a comprehensive view of the importance of different industries in an economy. This is because earnings incorporate both the number of jobs and the compensation per job. Earnings (alternatively, labor earnings) are defined as the sum of employee wage and salary disbursements, supplements to employee wages and salaries, and proprietors' (self-employed) income by industry. Supplements to wages and salaries consist of employer contributions for government social insurance and employer contributions for employee pension and insurance funds.

The Bureau of Economic Analysis compiles data on earnings. These data use the same industry groupings as the employment by industry data above.

Notable findings from data in **Table 3-69** include:

- The percentages of labor earnings generated by the non-services-related industries varied from 12 to 23 percent of total earnings across the study area. These percentages were highest in Luna County at 23 percent (BEA 2022c; Headwaters Economics 2022).
- The percentages of total labor earnings for the three non-services-related industries that are most directly supported by grazing and minerals uses of BLM-administered land—farm; forestry, and agricultural services; and mining (including fossil fuels)—are generally very low across the study area. Luna County appears to be an outlier, as the farm industry represents 5 percent of total labor earnings (BEA 2022c).
- Within the services sector, the industries contributing the greatest proportion of total labor earnings varied by county. At 16 percent and 10 percent, health care was highest in Doña Ana and El Paso Counties, respectively, but retail trade was highest in Luna County at 8 percent (BEA 2022c).

Economic Sectors and Outputs

This section discusses the economic sectors of agriculture and recreation at the state and county level. These are the sectors with the greatest potential to be affected by management decisions for public land that the BLM will make through the Monument RMP. Specific contributions to these sectors from BLM-administered lands is explored further in **Section 3.21.2, Uses and Values of BLM-administered Lands**.

Agriculture

Table 3-70 provides a summary of agricultural data for the study area counties and the states in which they reside, based on the 2017 Agricultural Census. Of the counties analyzed, Doña Ana and Luna Counties had the largest acreages of land in farms in 2017. Doña Ana County, however, had the largest disclosed acreages of total and harvested cropland. Doña Ana County produced the highest market value of crops and cattle sold in 2017. The total market value of cattle and calves sold in the three-county study area in 2017 was 1.7 percent of the total market value of cattle and calves sold statewide in both New Mexico and Texas.

Table 3-69
Distribution of Labor Earnings by Industry, 2021 (Thousands of 2022\$)

Industry	Doña Ana County		Luna County		El Paso County		New Mexico		Texas		US	
	Earnings	%	Earnings	%	Earnings	%	Earnings	%	Earnings	%	Earnings	%
Total earnings	\$5,866,247	100	\$529,209	100	\$26,205,021	100	\$67,720,587	100	\$1,319,091,332	100	\$15,427,339,920	100
Non-service	\$800,681	14	<i>\$123,460</i>	23	\$3,220,450	12	\$10,177,874	15	\$282,774,101	21	\$2,570,238,000	17
Farm	\$109,757	2	\$23,986	5	\$3,696	<1	\$780,113	1	\$5,371,565	<1	\$105,737,400	1
Forestry and agriculture	\$50,445	1	<i>\$15,556</i>	3	\$17,893	<1	\$174,126	<1	\$1,908,197	<1	\$41,854,320	<1
Mining	\$2,916	<1	\$335	<1	\$6,958	<1	\$2,346,802	3	\$69,232,344	5	\$140,618,160	1
Construction	\$393,862	7	\$38,312	7	\$1,829,276	7	\$4,386,733	6	\$97,743,548	7	\$939,771,720	6
Manufacturing	\$243,701	4	\$45,271	9	\$1,362,626	5	\$2,490,099	4	\$108,518,448	8	\$1,342,256,400	9
Services related	\$3,385,754	58	\$174,847	33	\$14,261,835	54	\$40,089,247	59	\$855,928,594	65	\$10,505,187,000	68
Utilities	\$41,565	1	\$9,911	2	\$240,867	1	\$607,768	1	\$10,176,538	1	\$130,772,880	1
Wholesale trade	\$116,538	2	\$5,335	1	\$1,151,891	4	\$1,716,389	3	\$74,112,553	6	\$709,585,920	5
Retail trade	\$339,607	6	\$43,519	8	\$1,918,257	7	\$4,561,446	7	\$78,252,366	6	\$904,745,160	6
Transportation	\$173,970	3	\$27,942	5	\$1,757,428	7	\$2,062,291	3	\$69,107,651	5	\$617,350,680	4
Information	\$42,475	1	\$1,077	<1	\$376,332	1	\$1,083,117	2	\$30,762,950	2	\$615,885,120	4
Finance	\$136,392	2	\$7,191	1	\$761,147	3	\$2,342,909	3	\$94,465,929	7	\$1,162,243,080	8
Real estate and rental	\$166,685	3	\$2,190	<1	\$644,637	2	\$1,483,472	2	\$29,182,426	2	\$392,680,440	3
Professional and technical	\$346,104	6	\$25,174	5	\$943,779	4	\$7,836,871	12	\$141,085,566	11	\$1,703,827,440	11
Company and enterprises	\$35,406	1	\$2,492	<1	\$128,164	<1	\$674,223	1	\$27,852,561	2	\$425,234,880	3
Administration and waste	\$227,517	4	\$9,628	2	\$1,468,920	6	\$2,893,629	4	\$66,359,177	5	\$667,813,680	4
Educational services	\$61,844	1	N/A	N/A	\$233,090	1	\$604,974	1	\$14,840,564	1	\$258,505,560	2
Health care	\$918,630	16	N/A	N/A	\$2,668,678	10	\$8,188,107	12	\$124,077,196	9	\$1,713,952,440	11
Entertainment and recreation	\$50,491	1	\$1,407	<1	\$76,412	<1	\$571,919	1	\$9,766,735	1	\$175,176,000	1
Accommodation and food	\$559,000	10	\$22,203	4	\$997,611	4	\$3,287,240	5	\$43,740,233	3	\$520,563,240	3
Other services	\$169,529	3	\$16,779	3	\$894,622	3	\$2,174,891	3	\$42,146,150	3	\$506,850,480	3
Government	\$1,718,186	29	\$184,468	35	\$8,722,736	33	\$17,453,466	26	\$180,388,637	14	\$2,351,914,920	15

Source: BEA 2021 as reported by Headwaters Economics 2022

Italicized numbers represent estimates provided by Headwaters Economics 2022.

(N/A) Not available.

Table 3-70
Study Area Land in Farms, Cropland, and Market Value (2017)

Area	Number of Farms	Acres				Market Value of Products (in thousands of 2017\$)	
		Land in Farms	Median Farm	Total Cropland	Harvested Cropland	Crops	Cattle
Doña Ana County	1,946	528,270	271	93,128	76,223	228,899	8,716
Luna County	221	575,884	2,729	30,007	20,168	48,403	10,384
El Paso County	656	142,675	217	39,915	30,318	40,381	5,555
Study Area	2,823	1,246,829	3,217	163,050	126,709	317,683	24,655
New Mexico	25,044	40,659,836	1,624	1,825,827	806,138	650,735	626,745
Texas	248,416	127,036,184	511	29,360,229	17,595,330	6,894,307	12,291,224

Source: NASS 2017, Tables 2 and 8

Table 3-71 provides 2017 cattle operations data for the study area counties and the states in which they reside. Data on BLM-administered livestock grazing in the study area are included in **Section 3.21.2, Uses and Values of BLM-administered Lands**. For many families, livestock operations on BLM-administered lands supplement the family's income, although some livestock operations are a full-time occupation. Livestock production levels reflect complex judgments on the part of producers regarding returns on management of their herds and the resulting impacts on their income. Actual net farm income is sensitive to many factors, including many outside of BLM management control, including prices for livestock, the impacts of seasonal weather on the availability of forage on public and private lands, prices of additional feed and other inputs to production, government payments to agricultural producers, the cost of capital, and many other factors.

Table 3-71
Total Cattle Operations and Cattle (2017)

Area	Number of Farms with Cattle and Calves	Number of Cattle and Calves	Number of Cows and Heifers that Calved	Number of Beef Cows	Number of Milk Cows	Other Cattle
Doña Ana County	150	66,423	39,861	7,800	32,061	26,562
Luna County	73	26,639	15,848	(D)	(D)	10,791
El Paso County	70	5,667	892	892	—	4,775
Study Area	293	98,729	56,601	8,692	32,061	42,128
New Mexico	10,880	1,498,731	820,208	482,320	337,888	678,523
Texas	152,882	12,573,876	5,104,591	4,572,724	531,849	7,469,285

Source: NASS 2017, Table 11

(D) represents data withheld for proprietary reasons.

Recreation

Outdoor recreation plays a key role in the New Mexico economy and has historically been a major land use in the area on public lands. Statewide, the outdoor recreation industry supported 28,475 jobs in 2021, an increase of 18.2 percent since 2020 (BEA 2021 data as reported by Headwaters Economics 2023).

According to the recent Headwater Economics report, the majority of outdoor recreation's contribution to the state's gross domestic product occurs in nature-based environments (such as hiking, skiing, fishing, and hunting), contributing \$678 million to the state's gross domestic product, based on 2017 data. By comparison, other forms of recreation that take place in urban and developed settings, such as golf, tennis, or soccer, contributed \$261 million to the state's gross domestic product. Nature-based recreation's contribution to gross domestic product grew by 14 percent between 2012 and 2017 (Headwater Economics 2020). In 2021, the outdoor recreation economic sector contributed approximately \$2.3 billion to the state's gross domestic product. This is equivalent to 2.1 percent of the state's gross domestic product; this is slightly above the national average of 1.9 percent. This figure includes conventional activities (that is, traditional outdoor recreational activities such as bicycling, boating, hiking, and hunting); other core activities, such as gardening and outdoor concerts; and supporting activities, such as construction, travel and tourism, local trips, and government expenditures. In New Mexico, conventional outdoor recreation alone generated approximately \$674 million, or one-third of the state's total outdoor recreation revenue (BEA 2021 data as reported by Headwaters Economics 2023).

Public Finance and Government Services

This section describes the categories of public finance that could be affected by management decisions for public land that the BLM will make through the Monument RMP. Surface land and federal mineral estate managed within the study area affect local, county, state, and federal government budgets based on revenues from mineral royalties, taxes, payments in lieu of taxes (PILT), fees, and other funding sources. Likewise, surface lands and federal mineral estate in the study area result in government expenditures for management, law enforcement, and other activities. This section addresses revenues; the next addresses expenditures. The information in this section is general, with a focus on natural resource-related revenue sources that apply to both BLM- and non-BLM-administered land.

Federal Payments

PILT are federal payments to local governments that help offset losses in property taxes due to nontaxable federal lands within their boundaries. Public Law 94-565, dated October 20, 1976, was rewritten and amended by Public Law 97-258 on September 13, 1982. It was codified at 31 USC 69. The law recognizes that the inability of local governments to collect property taxes on federally owned land can create a fiscal impact.

BLM-administered lands fall under Section 6902 of the PILT law, which establishes a formula for calculating payments for qualifying acres of entitlement lands. Payment is typically made directly to the eligible local government. Section 6902 of the PILT law states that recipients (usually counties) may use the PILT for any governmental purpose; the PILT are not required to be further distributed to other local government units.

The Department of the Interior computes payments authorized under Section 6902 of the act using the greater of the following two alternatives: (1) \$2.94 (in 2022) multiplied by the number of acres of qualified federal surface land in the unit of local government (as defined previously), reduced by the amount of

funds received by the locality in the prior fiscal year under certain other federal surface land revenue-sharing programs, such as the Secure Rural Schools program or the mineral leasing program, or (2) \$0.42 (in 2022) multiplied by the number of acres of qualified federal surface land in the unit of local government, with no deduction for the prior year’s payments. Both alternatives are subject to a population ceiling limitation computed by multiplying the county population by a corresponding dollar value (adjusted annually for inflation) contained in the act.

PILT are transferred to state or local governments, as applicable, and are in addition to other federal revenues, including those from grazing fees. In 2022, Doña Ana and Luna Counties received approximately \$5.7 million (combined) in PILT for federal lands totaling over 1.9 million acres; 97.3 percent of these acres were BLM-administered land (see **Table 3-72**).

**Table 3-72
Estimated BLM-Related PILT Revenue for Counties in the Study Area**

County	2021 Total PILT Payment to County	Total Entitlement Acres	2021 Per-acre Average Payment	BLM-administered Acreage	Estimated BLM-related Portion of PILT Revenue to County
Doña Ana County	\$3,518,008	1,183,275	\$2.97	1,131,162	\$3,359,551
Luna County	\$2,177,647	747,187	\$2.91	747,187	\$2,174,314
El Paso County	\$162	55	\$2.95	0	\$0.00

Source: DOI 2021

Note: PILT refers to payments in lieu of taxes. Note that Doña Ana and Luna Counties contain BLM-administered lands outside the Monument; therefore, the total BLM-related portion of PILT includes payments for lands outside the Monument. El Paso County contains no BLM-administered lands and therefore has no BLM-associated PILT.

Taxes and Revenue Related to BLM Resources and Resource Uses

The states of New Mexico and Texas, and various local governments, collect a variety of revenues related to the use of natural resources.

Livestock operators pay state and local sales taxes on goods and services purchased in support of their businesses; they also pay gasoline taxes when fueling motor vehicles. They also pay business income taxes. Employees of livestock businesses pay personal income taxes on their earnings. Under the Taylor Grazing Act, a portion of BLM grazing revenue is returned to the county of origin; 50 percent of Section 15¹⁶ fees collected are returned to counties, and 12.5 percent of Section 3¹⁷ fees are returned to counties.

Recreational visitors to BLM-administered land make expenditures that generate state and local tax revenues. These visit-related revenues include state gasoline tax (17 cents per gallon and 20 cents per gallon for New Mexico and Texas, respectively), state sales tax (4.875 percent state gross receipt tax for New Mexico and a sales and use tax rate of 6.25 percent for Texas), state business income taxes and

¹⁶ Under Section 15 of the Taylor Grazing Act, Section 15 lands are public lands that lie outside a grazing district administered by the BLM. The BLM authorizes livestock grazing on these lands by issuing leases to private parties.

¹⁷ Section 3 of the Taylor Grazing Act concerns grazing permits issued on public lands within the grazing districts established under the act. It gave leasing preference to landowners and homesteaders in or adjacent to the grazing district lands.

personal income taxes on employee earnings, and local sales tax (New Mexico Department of Taxation and Revenue 2023; Texas Comptroller of Public Accounts 2022a; Texas Comptroller 2022b).

For New Mexico, corporate income tax rates range from 4.80 to 5.9 percent. Personal income tax rates range from 1.7 to 4.9 percent (New Mexico Department of Taxation and Revenue 2021). Texas's franchise tax¹⁸ ranges from 0.375 to 0.75 percent; Texas does not have a personal income tax (Texas Comptroller 2022a).

For local sales tax, New Mexico's 2023 gross receipts tax rates include the 4.875 percent state gross receipts tax. The gross receipts tax varies depending on the location in the state. For Doña Ana County, the sales tax varies from 6.50 to 8.18 percent. In Luna County, the sales tax varies from 6.62 to 8.25 percent (New Mexico Department of Taxation and Revenue 2023). In contrast, El Paso County has 0.50 percent sales and use tax rate (Texas Comptroller 2022a). New Mexico does not have a local lodging tax however, lodging is subject to the state gross receipt tax (New Mexico Department of Taxation and Revenue 2022), while Texas has a lodging tax of 6.00 percent (National Conference of State Legislatures 2017).

The portion of total taxes for all travel expenditures in New Mexico and Texas that are attributable to recreation on BLM-administered land is very small. However, most of the taxes identified above apply to some degree to tourism expenditures made by persons who recreate on BLM-administered land, depending on travel distances (gas tax), the use of overnight accommodations (lodging tax), purchases made for the recreation visit (sales tax), and other factors. The state government and local governments benefit accordingly from recreation-related revenues.

Government Expenditures

BLM Expenditures

BLM expenditures related to federal lands benefit the local economy. This is because federal salaries to land management staff that resides in the study area and federal contracts to businesses located in or with employees residing in the study area represent inflows of money. This new income to the study area recirculates through purchases made by BLM employees, contractors, and vendors.

Table 3-73, below, displays information on BLM labor expenditures. Compensation to LCDO BLM employees totaled approximately \$9.1 million in fiscal year 2021. Compensation to Monument BLM employees totaled approximately \$854,298 in fiscal year 2021. Compensation for both administrative offices has increased annually over the past 5 fiscal years, excluding fiscal year 2019. It should be noted that it is often difficult to determine the percentage of BLM payroll and contracts that are attributable to a particular portion of the BLM-administered lands and programs in a field or district office; as a result, only district-wide data are presented in the table below.

¹⁸ The Texas franchise tax is a privilege tax imposed on each taxable entity formed or organized in Texas or doing business in Texas (Texas Comptroller 2021).

**Table 3-73
BLM Labor Expenditures (2017–2021)**

Administrative Office	County	Labor Expenditures*					Full-time Equivalents				
		Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020	Fiscal Year 2021	Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020	Fiscal Year 2021
LCDO	Doña Ana	\$8,439,701	\$8,357,580	\$7,989,299	\$8,375,697	\$9,106,836	105	90	88	81	92
Organ Mountain-Desert Peaks	Doña Ana	\$706,791	\$652,394	\$512,334	\$739,882	\$854,298	10	12	10	9	9
Total	—	\$9,146,492	\$9,009,974	\$8,501,633	\$9,115,579	\$9,961,134	115	102	98	90	101

Source: Weisenberger, M., BLM LCDO Monument Manager, personal communication with Megan Stone, AECOM Socioeconomic Resource Specialist, on May 17, 2022

*Note: Labor expenditures refer to staff salaries, including benefits; full-time equivalents refer to full-time equivalent staff numbers.

State and Local Government Expenditures and Services

Management of BLM-administered lands may affect state and local expenditures. For instance, recreation on public lands requires some support from local governments for road maintenance, law enforcement, and search and rescue. Heavy truck traffic from mineral development and production may significantly affect state and local roads. It is difficult to separate expenditures related to BLM-administered lands from expenditures related to other land.

The types of state and local expenditures that may be affected include conservation and wildlife management, emergency medical services, fire management, judicial system law enforcement personnel and equipment, local government administration, maintenance of state and local roads, public utilities, search-and-rescue teams, and solid waste collection and disposal.

These expenditures may be affected in two ways. First, increased use of BLM-administered lands may result in a greater need for the types of services and infrastructure listed above. In addition, in less common cases where the use of BLM-administered lands leads to substantially increased employment opportunities, populations in study area communities may increase. This often leads to increased demand for the services and infrastructure listed above. This also may lead to additional needs, such as increased school space, teachers, and other public facilities and personnel.

Uses and Values of BLM-administered Lands

This section profiles the many uses in the study area in general and the current level of use associated with BLM-administered lands and resources in the socioeconomic study area. It describes select economic and social implications of resource uses, including quantitative values, where available. This section also includes a discussion of experiences or uses of natural and cultural resources that lack a price (monetary value), which are collectively referred to as the “nonmarket values” of the area.

The uses and values addressed in this section include:

- Energy and mineral development
- Forestry, agriculture, and livestock grazing
- Recreation

- Lands, realty and cadastral survey
- Ecosystem services

Energy and Mineral Development

Mineral extraction on BLM-administered federal mineral estate occurs through three programs:

- Leasable minerals: fluid leasables, including oil, gas, and geothermal, and solid leasables, including coal
- Locatable minerals (hard-rock minerals)
- Salable minerals, such as gravel and sand

New Mexico is an important producer to extractive industries such as oil and gas, but the study area does not contribute to this statewide industry. Additionally, most of the significant mineral deposits in the study area have been mined historically and are no longer active.

Regarding fluid mineral development, there are no active producing oil and gas wells on BLM-administered land or with BLM mineral estate in the study area at this time (Glover 2017). Unless significant new oil and gas discoveries are made in the area, it is likely that future activity will remain similar to current levels, and any new development will be restricted to areas where recent drilling has occurred.

The study area has been identified as having high potential for renewable power from geothermal resources (US DOE 2003). Sources of geothermal energy include artesian hot springs and wells that tap into groundwater or dry rock at elevated temperatures resulting from high heat flow gradients in the subsurface. There are, however, no geothermal permits in the Monument. Furthermore, Presidential Proclamation 9131 (BLM 2014) withdrew all federal lands in the Monument from disposition under all laws relating to geothermal leasing, other than by exchange that furthers the protective purposes of the Monument.

Locatable minerals can be obtained in the study area by filing a mining claim; these minerals can be extracted by mining or quarrying methods. There are several mineral deposits in Doña Ana County, including in the Organ Mountains unit of the Monument (BLM 2006); however, there are no active mining claims or active mines in the Monument. Historically, there has also been production of metals, including silver, copper, lead, and zinc (BLM 2006).

The use of salable minerals requires either a sales contract or a free-use permit. Sales are at the estimated fair market value. Sand, gravel, and stone are the common salable minerals in the study area. They are generally found along mountain pediments, along alluvial valley floors, and in arroyos adjacent to mountain uplifts; however, no sites with private or free-use permits are located in the Monument.

Presidential Proclamation 9131 (BLM 2014) withdrew all federal lands in the Monument from all forms of mineral entry, location, selection, sale, leasing, or other disposition under the public land laws. Mineral development is allowed only for existing, valid mining claims and mineral leases, and then only under strict stipulations to minimize surface disturbance associated with mineral extraction. However, no such mining claims or mineral leases are known to exist in the Monument. As a result, current and future contributions from mineral development in the Monument are limited and will not be discussed in detail in this section.

Forestry

The BLM traditionally sells timber, woody biomass, and forest products permits. It also conducts stewardship contracting. Due to the natural environment of southern New Mexico, however, the BLM only conducts stewardship contracting in the study area (BLM 2018). The BLM uses stewardship contracts to manage forest or woodland stands. These contracts allow the harvest of commercial products to help pay for restoration services or other resource management needs in the area. Since 2007, two stewardship projects totaling 60 acres have occurred in the study area. **Table 3-74** shows information on these stewardship project treatments.

Table 3-74
Forestry Stewardship Projects Awarded

Project Name	County	Treatment	Acres*	Expenditures*	Year
Aguirre Spring Hazardous Fuel Reduction	Doña Ana	Hazardous fuel reduction service	50 (25 per year)	\$40,000 (\$20,000 per year)	2008–2009
Fort Cummings Cut-stump Project	Luna County	Two-part cut-stump treatment	10	\$15,000	2010

Source: BLM 2018

*Estimates

Forest and vegetation products may include timber, fuelwood, decorative wood, and biomass. These materials are used in various construction, agriculture, decorative building, landscaping applications, crafts or hobbies, and cultural practices. Under the BLM forest management program (43 CFR 5000), the removal of forest products is managed by either sales contracts or free-use permits. The BLM has not issued any permits for forest products in the study area within the last 7 years. Forestry is not currently a source of revenue for the area. Additionally, there are negligible forest products removed from the Monument; thus, forest products represent a minimal contribution to the study area economy.

Livestock Grazing

Historically, livestock grazing has been an important economic activity in the study area, and it continues to provide an economic base and a livelihood for people in the industry. Ranching is part of the region's cultural identity and is especially important to certain communities and stakeholder groups.

Section 3.15, Livestock Grazing provides information on grazing allotments in the study area. In total, the BLM manages 492,062 acres in grazing allotments, which is approximately 86.5 percent of the total allotment acres (see **Table 3-75**).

An AUM is the unit used to charge a permit holder for land use. An AUM is equal to the approximate amount of forage needed to sustain one cow and her calf, five sheep, or five goats for a month. Billed AUMs give an idea of the level of livestock grazing that occurs in the study area. Authorized AUMs represent the total level of AUMs that may be utilized; however, this amount varies depending on current range conditions and market conditions. Currently, the LCDO authorizes 85,874 AUMs in the Monument planning area. Of these AUMs, 84,943 are active and 931 are suspended.

Table 3-75
Grazing Allotment Acreage and Percentage by Owner/Jurisdiction

Owner/Jurisdiction	Grazing Allotment Acres Located Partially or Entirely in the Monument	Percentage of Total
BLM	492,062	86.5
State of New Mexico	67,575	11.8
Private	9,378	1.6
Total area	569,015*	100.0

Source: BLM GIS 2022

Note: Acres reported here may be slightly different from actual on-the-ground conditions due to ongoing ground truthing.

Billed AUMs for the study area allotments range from 41,168 to 68,462 AUMs. **Table 3-76** shows the number of billed AUMs from 2007 to 2020. Grazing levels from 2007 to 2020 have varied across the study area and were noticeably lowest in 2013.

Grazing fees and surcharges from the use of BLM-administered lands generate revenue for the federal government. Fifty percent of grazing revenue goes to the BLM Range Improvement Fund and is distributed to BLM district offices according to their grazing receipts; 37.5 percent goes to the US Treasury General Fund, and 12.5 percent goes to the state of origin and is distributed to local grazing boards.

Table 3-76
Billed and Permitted AUMs (2007–2020)

Year	Authorized AUMs*	Billed AUMs	Nonuse AUMs
2007	86,420	42,933	43,487
2008	86,420	43,609	42,811
2009	86,420	44,634	41,786
2010	86,420	49,359	37,061
2011	86,420	51,077	35,343
2012	86,420	49,332	37,088
2013	86,420	41,168	45,252
2014	86,420	58,027	28,393
2015	86,420	68,462	17,958
2016	86,420	57,310	29,110
2017	86,420	64,783	21,637
2018	86,420	66,376	20,044
2019	86,420	57,593	28,827
2020	86,420	50,620	35,800

Source: BLM 2021c

* There were 86,420 AUMs authorized during these years (2007–2020); however, authorized AUMs are now 84,943.

Note: This table includes the Altamira and Picacho Peak allotments. While these allotments fall partially within the Monument, they are billed under BLM-administered Prehistoric Trackways National Monument; however, they are included in this table for consistency.

Grazing fees are set annually by the Secretary of the Interior, according to the provisions of 43 CFR 4130.8-1. The fee is equal to the \$1.23 base established by the 1966 Western Livestock Grazing Survey, adjusted by indices for the value of forage, beef cattle prices, and livestock production costs. The fee is subject to a minimum fee of \$1.35 per AUM. The BLM adds a surcharge to the grazing fee bill for authorized grazing of livestock owned by persons other than the permittee or lessee.

Grazing on BLM-administered land provides a similar value to BLM grazing permittees as compared with leasing private land. The National Agricultural Statistics Service publishes the state private land lease rates annually, based on lease rates for private, non-irrigated grazing land from the January Cattle Survey. According to the National Agricultural Statistics Service data, the average grazing fee on private land in 2021 was \$20.50 per AUM (NASS 2020), as compared with the \$1.35 federal grazing fee in 2021. Despite differences in fees for grazing on public versus private land, when other factors are considered (such as animal loss, rangeland improvement and maintenance, moving livestock, and herding), the cost of forage on public land compared with private land is generally similar.

The direct economic value of cattle grazing in a specific area can be estimated based on the actual grazing use of the area in AUMs and the value of an AUM. According to Workman (1986), it takes 16 AUMs to produce a marketable cow. Thus, the average value of an AUM can be estimated using data on the value of cattle production per bred cow and dividing by 16. **Table 3-77** shows these calculations.

It is also important to recognize the social values associated with the long history and continuing presence of livestock grazing in the region. Such values include its continuing importance in maintaining the rural landscape and open space, and the role of BLM grazing lands in the ongoing support of New Mexico's ranching families and communities.

Table 3-77
Value of an AUM for Cattle Productions

Year	Value of Production per Bred Cow (\$)	AUMs per Cow	Value of Production per AUM (\$)
2012	744.93	16	46.56
2013	780.50	16	48.78
2014	1,076.00	16	67.25
2015	1,015.79	16	63.49
2016	704.62	16	44.04
2017	710.20	16	44.38
2018	589.29	16	36.83
2019	558.00	16	34.88
2020	565.77	16	35.36
2021	606.07	16	37.89

Sources: ERS 2021; Workman 1986

Economic studies were conducted by BBC Research and Consulting associated with the Monument designations in 2014 and 2022 (BBC Research and Consulting 2023). This 2023 economic report estimated the annual value associated with the 38 grazing allotments to be \$3.2 million. This amount includes the values of roughly 86,271 AUMs of forage permitted within the Monument (BBC Research and Consulting 2023). In 2012, BBC estimated the annual value associated with grazing allotments on the Monument to \$2.6 million, with this amount including the values of roughly 81,435 AUMs of forage permitted on lands proposed for inclusion in the Monument when the 2013 BBC study was conducted. These estimates provide an idea of the economic benefit provided to the community through ongoing livestock grazing and how economic contributions from grazing have increased over time.

Recreation

BLM recreation visitation levels affect the level of economic contributions in the regional economy. They also demonstrate the BLM recreation areas' importance for regional recreation use. Recreation data are

captured in the BLM Recreation Management Information System database. Numbers are recorded at BLM sites and areas, based on registrations, permit records, traffic counters, observations, and professional judgment. The BLM estimates visitation by the number of discrete visits as well as visitor days. A visitor day is a recreation unit of measure commonly used by federal agencies; it represents an aggregate of 12 visitor hours at a site or area. It is important to note, however, that the visitation figures are estimates.

Table 3-78 displays the Recreation Management Information System figures for the Monument. Visitation in the Monument did not vary much between 2017 and 2019, staying between 415,690 and 493,967 total visits; however, visitation dropped significantly to 296,603 in 2020 before rising to 662,445 in 2021. Visitor days followed the same trend, hitting 1,295,628 in 2021. These recent trends likely reflect an initial reduction of visitation in 2020 due to the outbreak of the COVID-19 pandemic, followed by a large increase in visitation following the increased interest in recreational use as the pandemic continued.

For all years displayed, areas with the highest level of concentrated use included the Dripping Springs Natural Area, Sierra Vista Trail, and Soledad Canyon.

The BLM manages for a wide range of dispersed and casual-use recreation, such as camping, hiking, and hunting. Although the BLM manages a small percentage of the land base in the study area, these public lands provide important recreation opportunities.

Table 3-78
Recreation Visits and Visitor Days (2017–2021)

Recreation Areas	2017		2018		2019		2020		2021	
	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days
Doña Ana Mountains										
Dispersed—Doña Ana Mountains	26,400	22,592	26,556	33,030	30,175	44,447	40,119	59,133	49,215	72,715
Organ Mountains										
Aguirre Spring Recreation Area	32,255	80,234	33,000	87,395	54,700	178,459	8,669	28,283	89,611	29,235
Baylor Canyon Trail	6,350	7,011	6,400	3,627	3,346	3,022	2,632	2,500	3,680	2,085
Dispersed—Organ Mountains	151,057	437,955	151,000	433,999	158,894	444,184	167,389	470,472	192,508	553,300
Dripping Springs Natural Area	85,044	120,656	86,000	65,217	103,053	78,149	32,853	24,504	172,542	130,844
Sierra Vista Trail	30,600	70,954	30,599	70,559	48,882	127,955	7,163	18,493	44,183	115,980
Soledad Canyon	63,971	81,296	64,000	81,333	71,477	76,540	10,546	11,293	81,935	87,739
Potrillo Mountains										
Dispersed—Potrillo Mountains	1,425	3,580	1,450	2,235	1,465	2,259	1,494	2,303	5,170	7,970
Kilbourne Hole	0	0	0	0	2,465	2,260	3,192	2,926	2,745	2,516
Robledo Mountains										
Dispersed—Robledo Mountains	10,052	34,338	10,100	20,200	10,201	20,402	10,405	20,810	11,446	22,892
Picacho Peak	12,060	2,889	4,985	1,225	7,693	2,949	8,860	3,396	5,945	2,279

3. Affected Environment and Environmental Consequences (Social and Economic Conditions)

Recreation Areas	2017		2018		2019		2020		2021	
	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days
Sierra de las Uvas										
Dispersed— Sierra de las Uvas	1,500	5,919	1,600	2,287	1,616	2,310	3,281	4,689	3,465	4,952
Total visitation	420,714	867,424	415,690	801,107	493,967	982,936	296,603	648,802	662,445	1,295,628

Source: BLM 2021d

Located adjacent to and on the east side of Las Cruces, the Monument provides opportunities for photography, hiking, horseback riding, mountain biking, camping, and wildlife viewing. Recent visitor survey data at the Monument (BLM 2021d) indicate that the activities with the highest participation rates include hiking and walking (78 percent), biking (29 percent), sightseeing (21 percent), and bird-watching (13 percent; see **Table 3-79**). Of the 165 survey respondents, 95 percent reported residency in Doña Ana County, with 5 percent traveling from other parts of New Mexico. Most visitors to the Monument do not stay overnight.

Table 3-79
Recreation by Primary Activity Type (2017)

Activity	Percentage of Participation
Camping	3
Fishing	2
Hunting	1
Recreational shooting	1
Sightseeing	21
Picnicking	6
Hiking and walking	78
Swimming	1
Motorized boating	1
Nonmotorized boating and rafting	1
Horseback riding	2
Rock climbing	6
Driving for pleasure	1
Bicycling	29
Riding/driving OHVs	1
Education and interpretation	2
Bird-watching and wildlife viewing	13
Other	4

Source: BLM 2021d

Note: Total exceeds 100 percent due to participants in the survey having the option to select up to three primary activities.

The BLM also issues SRPs for commercial, competitive, vending, and organized group activities and events. The BLM may issue SRPs for 10 years or less, with annual renewals. The BLM issues the permits to manage visitor use, protect natural and cultural resources, and accommodate commercial recreation uses. The SRPs that fall within the competitive and commercial categories in the Monument include the Horny Toad Hustle Mountain biking race held in the Doña Ana Mountains and the Sierra Vista Trail Runs held in the Organ Mountains. These are popular competitive events in the community that bring anywhere from 100 to 200 athletes to their respective sports. There are also two commercial permits issued within the Monument for guiding services that include all-terrain vehicle tours and mountain biking tours.

Table 3-80, below, provides information on SRPs issued by the LCDO and associated revenue generated. Of the past 5 years, 2019 had the highest number of issued SRPs (a total of 10) and, consequently, the highest revenue at \$3,302. The BLM retains and spends collected recreation fees for maintenance, improvements, and services at the site or in the area in which the recreation fees are collected. The collected recreation fees, through the Federal Lands Recreation Enhancement Act, help to provide a minimum standard of services and amenities.

Table 3-80
Special Recreation Permits Issued by the LCDO

Fiscal Year	Number of Permits	Revenue Generated
2017	4	\$2,485
2018	4	\$1,234
2019	10	\$3,302
2020	7	\$2,270
2021	5	\$1,549

Source: BLM 2021d

Since the Monument's designation, visitation and subsequent revenues for both of the associated developed recreation sites have steadily increased. Day use is \$5 per vehicle at Aguirre Spring Recreation Area and Dripping Springs Natural Area. Additionally, both sites have a \$15 per bus fee. Aguirre Spring charges a camping fee of \$7 per campsite, and group sites can be reserved for \$50. Aguirre Spring Campground includes 55 individual campsites that are available on a first-come basis, and it has two group sites.

Recreation benefits to the local economy typically include increasing local employment, wage levels, and income; reducing poverty; and improving education and health. The Monument's designation was expected to increase regional economic activity by approximately \$7.4 million and 88 jobs, according to a 2013 study (BBC Research and Consulting 2013). The Economic Research Service also found that job earnings in recreation counties are \$2,000 higher than in non-recreation counties (Reeder and Brown 2005).

Recreation's economic impacts result from visitor expenditures, including spending on lodging, restaurants and bars, groceries, gas and oil, other transportation, activities, admissions and fees, and souvenirs or other expenses. Because visitors who are local to the study area have different spending patterns than visitors who travel to the region from outside areas, this spending analysis accounts for local and nonlocal visitors separately. The following spending categories and percentages (**Table 3-81**), developed based on US Department of Agriculture, Forest Service visitors, may represent a reasonable proxy for spending by visitors to BLM-administered lands.

The 2023 BBC Research and Consulting economic report used the visitor spending profiles presented in Table 23 above, along with BLM visitation estimate, and their own calculation methods, to estimate economic contributions associated with visitation to the Monument. The report estimates that annual nonlocal visitor expenditures yielded a direct economic impact of approximately \$29.99 million in 2022, compared to \$8.99 million in 2012 (BBC Research and Consulting 2023). Since the Monument was designated in 2014, it is estimated that nonlocal visitors to the Monument have spent a cumulative \$191 million in Doña Ana, Luna, and Sierra Counties, New Mexico, and El Paso County Texas, an average of \$21.2 million per year (BBC Research and Consulting 2023).

Overall, this 2023 economic report found that visitation to the Monument has exceeded past visitation and economic projections, in part due to the value of the National Monument brand. The designation itself conveys information to potential visitors regarding the quality of resources and amenities available at the site (BBC Research and Consulting 2023).

Table 3-81
National Forest Visitor Spending Profiles by Trip-type Segment and Spending Category

Spending Categories	Nonlocal			Local			Non-primary	All Visits ^b
	Day (%)	Overnight-National Forest (%)	Overnight-Other (%)	Day (%)	Overnight-National Forest (%)	Overnight-Other (%)		
Motel	0.0	17.8	35.1	0.0	3.6	30.0	33.1	27.1
Camping	0.0	11.0	2.4	0.0	15.7	3.7	2.9	3.7
Restaurant	21.6	9.7	20.1	15.7	4.3	18.9	22.1	18.9
Groceries	15.6	21.9	12.5	18.4	39.8	14.9	11.8	14.9
Gas and oil	44.2	24.7	14.2	42.9	25.9	19.5	14.9	19.5
Other transportation	0.8	0.5	0.9	0.4	0.0	0.7	0.8	0.7
Entry fees	6.0	2.8	2.2	7.5	2.5	2.7	1.8	2.7
Recreation and entertainment	4.3	2.9	5.7	2.8	1.1	4.7	5.2	4.7
Sporting goods	4.6	4.3	2.4	10.6	6.5	3.3	1.9	3.3
Souvenirs and other expenses	2.8	3.1	4.5	1.7	0.6	4.3	5.6	4.3

Source: White 2017

Note: These averages exclude visitors who claimed their primary activity was downhill skiing or snowboarding.

^b The all-visit averages are computed as a weighted average of the columns using the national trip segment shares for non-downhill skiing/non-snowboarding as weights.

Transportation and Access

As described in **Section 3.18**, Transportation and Access, transportation resources in the study area consist of airspace used for military training exercise purposes and weapon system testing, as well as two railroads, the existing route network, and OHV use areas. The BLM manages OHV use to provide access, minimize conflicts, and protect natural resources. OHV area designations outline management prescriptions and set restrictions on OHV use. Possible OHV designations are open, limited (to either existing or designated roads or trails), or closed to vehicles. Typical recreational OHV activities within the study area include all-terrain vehicle and motorcycle trail riding, races, and rock crawling. OHVs also are used for non-recreational purposes, primarily associated with ranching activities.

OHV access to public lands is important to economic activity and quality of life. For instance, access to ROWs, communication sites, mining sites, and other commercial sites may affect the commercial viability of the operations at these sites, and thereby affect the contributions of these sites to the local economy. Recreational use of OHVs also contributes to the local economy when OHV users make local expenditures for goods and services associated with their use of BLM-administered lands for OHV riding. These expenditures also generate tax revenues.

OHV use can also have adverse environmental effects if users drive off established roads and trails and pioneer unauthorized roads and trails. This can cause damage to vegetation, soils, and other resources. Certain environments are more susceptible to OHV damage, including riparian habitats, desert soils with cryptobiotic crusts, and areas with steep slopes or sensitive soils. Adverse environmental effects from OHV use can have adverse economic effects when they result in increased expenditures for restoration and mitigation. They also have negative social effects by affecting the values and enjoyment of other recreationists and other public land users.

Section 3.18, Transportation and Access, provides information on the areas where OHV use is limited to designated roads and trails, areas closed to motorized travel, and areas where motorized travel is limited to existing roads and trails.

Due to the checkerboard surface ownership status within the Monument units, access to some parts of the Monument can be challenging. Areas where access may be an issue extend throughout the planning area; they are not necessarily concentrated within a particular geographic area. Beginning in 2018, Doña Ana County expressed interest in improving several roads that lead to and surround parts of the Organ Mountains unit of the Monument. These improvements will come in the form of paved roads and parking lots. Previous visitation trends in the Monument have indicated that paving access roads to the Monument has increased recreation use. Such improvements that increase recreation use could result in economic contributions to local economies. Urban areas, such as Las Cruces and El Paso, provide key access points to the Monument units. The growing populations in these urban areas may demand additional access to the Monument.

Lands, Realty, and Cadastral Survey Programs

As described in **Section 3.17**, Lands, Realty, and Cadastral Survey, the LCDO's lands, realty, and cadastral survey programs provides for uses of public land and improves management of public land through land tenure adjustments. The primary responsibilities of the lands, realty, and cadastral survey program include land use authorizations (management of land boundaries, ROWs, communication sites, corridors, leases, permits, and Recreation & Public Purposes Act leases), land tenure adjustments (management of land boundaries, acquisitions, disposals and exchanges), and withdrawals (management of land boundaries pertaining to removing a portion of the public lands from the operation of one or more of the public land laws).

BLM-administered lands, realty, and cadastral survey actions and policies can have important socioeconomic effects. Linear ROWs for electrical transmission and pipelines that cross the region link energy providers in one state to another. Land disposals, ROWs, leases, and permits allow economic activity. They also may further the economic development of communities within the study area or serve other important social purposes. Withdrawals and acquisitions may be pursued to protect important resources of economic or social significance to the public.

Lands, realty, and cadastral survey actions also have important implications for public finance. Leases of BLM-administered lands and federal mineral estate produce revenue for the government. Disposal of BLM-administered land to private ownership may reduce PILT by the federal government to local governments; however, they also result in payments of property taxes to local governments by the new private property owner(s). The BLM's acquisition of private land reduces property taxes paid to local governments but typically increases the PILT. Management of land boundaries brings certainty of location to the geographic limits of federal interest land location, thereby eliminating or mitigating legal or administrative conflicts over important resources significant to the public.

Land Tenure Adjustments

Land tenure adjustments are often associated with accommodating public and private needs, enabling community expansion, consolidating public land, acquiring and protecting important resources, acquiring access to public lands, or serving a national priority.

Land tenure adjustments could change the amount of public land and miles of boundaries managed by the BLM within the planning area. Based on past trends, changes to land tenure would most likely remain the same, but they likely could increase the proportion of land that is administered by the BLM through acquisition. During this planning process, the BLM intends to review and identify parcels of state trust and private lands for acquisition. Future growth, particularly within the Las Cruces metropolitan area in Doña Ana County, is already increasing pressure on public land to provide for both community growth and open space; this trend is expected to continue.

Land Use Authorizations

Public lands throughout the study area are generally made available for all types of land use authorizations. For more detailed information, see **Section 3.17**, Lands, Realty, and Cadastral Survey, above, and Section 4.5, Lands and Realty, in the OMDPNM Socioeconomic Baseline Report (BLM 2023c).

The planning area is characterized by rural qualities and open spaces with urban developments located adjacent to the Rio Grande and major transportation corridors. Primary land uses that occur within the planning area include a variety of residential, commercial, industrial development, recreational, grazing, and mining activities. Residential, commercial, and industrial land uses are mostly concentrated within the Organ and Doña Ana Mountains; fewer uses are dispersed throughout the Robledo, Sierra de las Uvas, and Potrillo Mountains. The ROWs include a variety of uses, such as utility (power, telephone, and cable), oil and gas pipelines, water facilities (irrigation or domestic pipelines, wells, ditches, and reservoirs), roads, communications, Recreation & Public Purposes Act leases, and other site-specific uses.

Based on past trends, requests for land use authorizations have been consistent and increasing. The projected population growth will likely drive an increase in the demand for facilities to accommodate this growth. This would include development of utility lines, communication sites, and other ROWs adjacent to the Monument.

Demand for land use authorizations in the study area is anticipated to increase in conjunction with future residential and commercial development and increasing population and energy demand. The BLM may issue authorizations for renewable energy projects in the study area; this is because a report by the Department of Energy has assessed that the area has potential for development of solar and wind energy (BLM 2017b). Areas of high potential for future developed land uses include continual operations of existing utility ROWs, existing communication sites, and continued commercial filming and photography in the Monument.

Nonmarket Values and Ecosystem Services

Market values of BLM-administered surface lands and federal mineral estate are relatively easy to understand and assess. Commodities produced through the use of BLM-administered lands (such as livestock, timber, electricity from renewable energy projects, etc.) have a price in the marketplace that can be easily determined. Economic methods are readily available for measuring the flow of income and employment resulting from the production of commodities. Using economic impact models, economists can then estimate the business-related purchases that developers and operators will make from other firms and estimate how employees will spend their wages on household-related purchases from businesses throughout the local economy.

The term “nonmarket values” refers to the benefits individuals attribute to experiences of the environment or uses of natural and cultural resources that do not involve market transactions and therefore lack prices. Examples include the benefits received from wildlife viewing, hiking in a wilderness, or hunting for recreation. In examining nonmarket values, economists often distinguish between “use values” and “nonuse values.” The term “use value” refers to the benefits an individual derives from some direct experience or activity, such as climbing a spectacular peak, hunting, or wildlife viewing. In contrast, “nonuse value” refers to the utility or psychological benefit some people derive from the existence of some environmental condition that may never be directly experienced (such as the unspoiled Grand Canyon or the continued presence of an endangered species).

The following subsections further describe use and nonuse values and other values that are generally addressed within a nonmarket value framework. See the 2018 OMDPNM Socioeconomic Baseline Report (BLM 2018) for a detailed definition of use and nonuse values. Details are included below for two nonmarket components of particular importance to the Monument; these are the so-called enhancement values associated with special designation areas and ecosystem service nonmarket values.

Social values, such as the role of BLM-administered land in local customs and lifestyles, are a type of nonmarket value. These values may differ based on the concerns of particular individuals and user groups. For information on the values associated with different types of stakeholders, see **Section 3.21.2, Stakeholders**.

Ecosystem Service Values

Nonmarket values¹⁹ of open space and well-managed natural resources also include a broad range of human benefits resulting from healthy ecosystem conditions and functions, known as “ecosystem services” (MEA 2005). These ecosystem services are commonly grouped into four broad categories based on how human beings interact and derive value from them:

- *Provisioning services* provide products that are used directly by people (for example, food, water, and raw materials).
- *Regulating services* are outputs from the normal functioning of ecosystems that benefit people in direct ways (for example, regulation of climate, air and drinking water quality, soil formation and retention, moderation of extreme events, and biological control).
- *Supporting services* are processes that are necessary for the production of other ecosystem services (for example, habitat for plants and animals, conservation of genetic diversity, and cycling of nutrients).
- *Cultural services* provide benefits to people through meaningful interactions with nature (for example, aesthetic enjoyment, recreation, spiritual enrichment, and cognitive development).

¹⁹ Note that confusion can arise regarding the difference between ecosystem service values and nonmarket values. BLM Instruction Memorandum 2013-131 explains that “Ecosystem goods and services include a range of human benefits resulting from appropriate ecosystem structure and function, such as flood control from intact wetlands and carbon sequestration from healthy forests. Some involve commodities sold in markets, for example, timber production. Others, such as wetlands protection and carbon sequestration, do not commonly involve markets, and thus reflect nonmarket values” (BLM 2013). There is a link between these two concepts in that nonmarket values are captured within the ecosystem goods and services framework, but evaluating nonmarket values does not require an ecosystem services approach.

The benefits that humans receive from ecosystem services can be categorized as use values and nonuse values. Economists have developed a variety of methods and approaches for estimating the monetary values associated with ecosystem services.

Throughout this planning process, the BLM has considered both the market and nonmarket value of maintaining or improving the structural and functional benefits of ecosystems.

Table 3-82, below, presents an initial listing of ecosystem services in the study area. These services, with examples in parentheses, are further defined by the value (use versus nonuse) and a qualitative description of their importance (magnitudes of the ecosystem service value and estimated vulnerability resulting from changing management of the resource). An additional description is provided for ecosystem services identified as having a “high” value.

**Table 3-82
Identifying Ecosystem Services with Nonmarket Values in the Study Area**

Resources and Uses	Value		Importance in Projects	
	Use	Nonuse	Magnitude of Value	Vulnerability
Provisioning Services				
Fishing	Yes	No	Low	Low
Food (grazing)	Yes	No	Moderate	Low
Regulating Services				
Air regulation (clean air)	Yes	Yes	Low	Low
Climate regulation (carbon storage and sequestration)	Yes	Yes	High	Low
Waste treatment (nitrogen and phosphorous absorption)	Yes	No	Low	Low
Biological control (pest control)	Yes	Yes	Low	Low
Water quality (clean water)	Yes	Yes	Low	Low
Erosion prevention (sediment runoff)	Yes	No	Low	Low
Supporting Services				
Soil formation	Yes	No	Low	Low
Photosynthesis	Yes	No	Low	Low
Biodiversity (flora and fauna)	Yes	Yes	High	Low
Habitat (wilderness characteristics)	Yes	Yes	Moderate	Low
Cultural Services				
Stewardship (preserving history)	No	Yes	Low	Low
Aesthetic (viewscales)	No	Yes	Moderate	Low
Tribal importance	Yes	Yes	Moderate	Low
Recreation	Yes	No	High	Low
Education	Yes	No	Low	Low

Source: BLM 2018

For the purposes of this brief survey of ecosystem services in the study area, a full accounting of the monetary value of ecosystem services was not feasible. Rather, this analysis focuses on identifying some of the ecosystem services that are most relevant to the planning efforts. Additional details on the valuation of ecosystem services in the planning area can be found in the 2018 OMDPNM Socioeconomic Baseline Report (BLM 2018). It should be noted that quantitative values estimated for ecosystem services have a wide range based on the variability of primary literature. Therefore, when conducting a benefit value transfer, caution is recommended to find primary literature sources that estimate values for local regions

or identical land types (for example, deciduous versus evergreen forest) to ensure accuracy of monetized estimates.

Climate-regulating services have been identified as an important regulating ecosystem service in the study area and can include both the sequestration and storage of carbon dioxide from the atmosphere by the vegetation in the study area. The value of this carbon removal is highly dependent on the type of vegetation (flora with a larger mass, such as trees, sequester and store more carbon). For example, for an acre of forested land, the value of annual carbon sequestration can range from \$6 to \$18 compared with grassland values of \$0 to \$13.²⁰ These values represent the benefit of preventing long-term climatic change from altering the climate and weather patterns of the region.

Due to the importance of recreation in the area, supporting ecosystem services for plant and animal habitats are of particular relevance. The value ascribed to biodiversity and habitat can vary widely based on the study location and topic. Additionally, supporting ecosystem services are often not valued directly by economists. This is because these services are viewed as intermediate services that support ecosystem services in other categories to which economists do ascribe a value. A recent assessment of ecological values for 22 national monuments by Conservation Science Partners indicated that the Monument is important for ecological values as compared to other monuments. This study found that the Monument ranks in the 97.4 and 94.2 percentiles in reptile and bird diversity, respectively, out of the monuments examined ([Conservation Science Partners 2017](#)). The assessment also found that the Monument ranks in the 94.1 and 88.9 percentiles in rarity-rated species richness and mammal diversity, respectively.

Recreation is an important cultural service supported by the Monument, and visitors generally have a high level of satisfaction with their recreation experience (BLM 2021a). One method used to determine the value associated with recreation is contingent valuation, in which participants are asked to provide information on the amount they would be willing to pay to participate in recreation. The difference between this amount and the actual (lesser) cost paid for the activity is called the consumer surplus. Consumer surplus values for recreation in the study area were estimated using economic valuation data for the US Department of Agriculture forest region 3 in the year 2016 from Rosenberger et al. (2017) and visitation data by recreation activity from the BLM Recreation Management Information System in the year 2021. Results are presented in **Table 3-83**, below. The estimated consumer surplus for recreation in the study area is over \$26 million.

Table 3-83
Consumer Surplus Value of 2016 Recreation in the Study Area (2016\$)

Activity	Visitor Days 1	Average Consumer Surplus 2	Total Value of Recreation
Aguirre Spring Campground			
Backpacking	1,500	\$40.89	\$61,335
Bicycling	375	\$94.48	\$35,430
Camping	7,500	\$43.36	\$325,200
Climbing – mountain/rock	1,000	\$72.75	\$72,750
Driving for pleasure	2,500	\$72.75	\$181,875
Environmental – education	700	\$67.87	\$47,509
Gathering forest products	250	\$72.75	\$18,188

²⁰ These per-acre estimates are based on the benefit value transfer of carbon sequestration rates of land types (Batker et al. 2014).

3. Affected Environment and Environmental Consequences (Social and Economic Conditions)

Activity	Visitor Days 1	Average Consumer Surplus 2	Total Value of Recreation
Hiking, walking, and running	3,000	\$92.20	\$276,600
Horseback riding	150	\$72.75	\$10,913
Hunting	1,800	\$85.16	\$153,288
Nature study	1,250	\$67.87	\$84,838
Photography	750	\$67.87	\$50,903
Picnicking	3,500	\$56.92	\$199,220
Rock hounding/mineral collection	150	\$72.75	\$10,913
Social gathering, festival, and concert	6,250	\$72.75	\$454,688
Wildlife viewing	6,250	\$67.87	\$424,188
Baylor Canyon Trail			
Climbing – mountain/rock	51	\$72.75	\$3,710
Hiking, walking, and running	1,779	\$92.20	\$164,024
Photography	51	\$67.87	\$3,461
Viewing	51	\$67.87	\$3,461
Dispersed Organ Mountains			
Archery	1,250	\$72.75	\$90,938
Backpacking	12,500	\$40.89	\$511,125
Bicycling	12,500	\$94.48	\$1,181,000
Camping	12,500	\$43.36	\$542,000
Climbing – mountain/rock	25,000	\$72.75	\$1,818,750
Driving for pleasure	10,000	\$72.75	\$727,500
Gathering forest products	2,500	\$72.75	\$181,875
Hiking, walking, and running	45,000	\$92.20	\$4,149,000
Horseback riding	2,500	\$72.75	\$181,875
Hunting	33,750	\$85.16	\$2,874,150
Nature study	3,750	\$67.87	\$254,513
OHV	10,000	\$58.19	\$581,900
Photography	10,000	\$67.87	\$678,700
Picnicking	2,500	\$56.92	\$142,300
Rock hounding/mineral collection	2,500	\$72.75	\$181,875
Social gathering, festival, and concert	2,500	\$72.75	\$181,875
Target practice	625	\$72.75	\$45,469
Trapping	3,000	\$85.16	\$255,480
Wildlife viewing	26,250	\$67.87	\$1,781,588
Dripping Springs			
Climbing – mountain/rock	1,285	\$72.75	\$93,484
Driving for pleasure	2,570	\$72.75	\$186,968
Environmental education	2,570	\$67.87	\$174,426
Hiking, walking, and running	28,917	\$92.20	\$2,666,147
Nature study	5,141	\$67.87	\$348,920
Photography	2,570	\$67.87	\$174,426
Picnicking	3,856	\$56.92	\$219,484
Wildlife viewing	12,851	\$67.87	\$872,197
Sierra Vista Trail			
Bicycling	3,000	\$94.48	\$283,440
Hiking, walking, and running	4,000	\$92.20	\$368,800
Target practice	250	\$72.75	\$18,188
Wildlife viewing	250	\$67.87	\$16,968
Soledad Canyon			
Bicycling	528	\$94.48	\$49,885
Climbing – mountain/rock	1,056	\$72.75	\$76,824

Activity	Visitor Days ¹	Average Consumer Surplus ²	Total Value of Recreation
Geocaching	528	\$67.87	\$35,835
Hiking, walking, and running	11,084	\$92.20	\$1,021,945
Nature study	3,167	\$67.87	\$214,944
Picnicking	2,111	\$56.92	\$120,158
Wildlife viewing	8,445	\$67.87	\$573,162
Total			\$26,460,608

Sources: BLM RMIS 2021; Rosenberger et al. 2017

Special Designations and Enhancement Values

Special designations, whether legislative designations, such as national parks, wilderness areas, and national conservation areas, or administrative designations, such as ACECs, usually result in additional protections to the ecological, cultural, and open space values of the designated areas. A common concern with special designations is that protections that may be put in place may affect traditional, commodity-based uses of public lands, such as livestock grazing. Restrictions on these activities may reduce economic activity for individual resource users and for local or regional communities. They may also have social impacts (for instance, on local customs and lifestyles surrounding ranching). A study looking at the communities surrounding the Monument found that traditional commodity-based industries have held steady in their contribution to the local economy after designation of the Monument (Headwaters Economics 2017a). A 2018 study for Doña Ana County estimated that approximately 24,000 nonlocal visitors visited as a result of national monument designation; these visitors contributed \$1,703,600 additional economic contributions to Doña Ana County (Economic Development Department City of Las Cruces 2018).

It is important to recognize the potential for negative economic and social impacts from special designations. It is also important to recognize that special designations may have positive economic and social effects. These effects are typically less obvious; therefore, they merit additional discussion. A growing body of evidence suggests that “natural amenities,” such as scenery, access to recreation, and the presence of protected areas, have positive economic benefits for communities possessing such amenities. A study by Headwaters Economics (2007) summarizes much of the available research and reaches several conclusions:

- Entrepreneurs and employees who do not depend on a particular workplace location (“cybercommuters”) are attracted to areas that possess high levels of natural amenities.
- Retirees are attracted to areas that possess high levels of natural amenities.
- A positive relationship exists between environmental protection and in-migration, retaining businesses, and attracting new businesses.
- There is no evidence to suggest that protection of public lands is detrimental to local economies.

The above conclusions are reinforced by several other comprehensive studies, including those by the Sonoran Institute (2004) and the Wilderness Society (2007).

Research on communities surrounding national monuments in the West (Headwaters Economics 2017b) provides additional evidence that special designations are not incompatible with economic growth and, in some cases, help such growth. This research examined the 17 national monuments in the 11 western continental states that are larger than 10,000 acres and were established in 1982 or later. The research found:

- Economic growth, as measured by population, employment, personal income, and per capita income growth, followed the creation of every national monument studied.
- Compared with benchmark counties in the state where each monument is located, in 13 cases the economic indicators grew at similar or faster rates than the benchmark; in four cases, the indicators grew slower.
- In one case—El Malpais National Monument in New Mexico—key indicators (population, employment, personal income, and per capita income) after designation reversed declines experienced in the years before designation.

Another economic benefit of natural amenities is the enhancement effect of open space, including protected lands, on property values. The studies noted above, among others, have demonstrated that homes and properties located close to open space are more valuable relative to properties located farther away, holding all else constant. This relationship varies based on the various characteristics (type, size, location, etc.) of open space resources, including the quality of views provided by the open space near a property. Open space can indirectly affect property tax revenues realized by local jurisdictions through the effect open spaces have on property value assessments.

Furthermore, special designations may enhance many of the ecosystem services outlined in the section above. For example, supporting services, including biodiversity and habitat, are supported by management that limits development. Furthermore, cultural services, such as those associated with nonmotorized recreation (that is, a quiet recreation experience), and visual setting are supported by special designations such as those supporting wilderness values. In a 2017 survey, respondents noted that the presence of natural places was a strong contributor to overall satisfaction with visitation. Wilderness values and the recreation activities also contributed to overall satisfaction for all respondents (BLM 2017c).

3.21.3 Environmental Consequences

Issue 1: How would the alternatives impact jobs and income in the socioeconomic study area?

Summary of Analytical Methods

IMPLAN is a regional economic input-output model that provides a mathematical account of the flow of dollars and commodities through a region's economy. This model provides estimates of how a given amount of an economic activity translates into jobs and income in the region. Economic impacts based on IMPLAN modeling are described in terms of direct, indirect, and induced impacts. Direct impacts, such as income and employment, are directly affected by activity on BLM-administered lands. Indirect impacts occur when related industries gain from purchases by the directly affected businesses, such as the ranchers buying supplies from local businesses. Induced impacts are the results of spending by the local businesses' employees, such as the employees spending money in a local restaurant. Together, these are reported as the total impact.

The quantified economic analysis using the IMPLAN model provides estimates of employment in the planning area from livestock grazing and recreation on BLM-administered lands. For all economic modeling presented here, data are estimates, based on best available information. Actual impacts would vary, based on site-specific differences and changes in market demand, policy, population change in the planning area, or various other factors that could alter the economic impact of BLM-administered land use. Included narratives discuss the specific limitations of data and modeling for each specific resource use.

This analysis used IMPLAN 2019 model data. While 2020 IMPLAN model year data were available at the time of analysis, it was determined that, due to temporary economic changes associated with the COVID-19 pandemic in 2020, the data were not representative of the long-term economic trends in the area; therefore, the 2019 model data represented the best available information. Additional details of the impacts approach are included in **Appendix C**, Socioeconomics Technical Appendix.

Indicators

- Jobs and income

Assumptions

- The analysis includes the following general assumptions for the IMPLAN model:
- The region of analysis consists of Doña Ana County and Luna County, New Mexico, and El Paso County, Texas.
- Values are presented in \$2021, unless otherwise noted.
- Jobs are based on IMPLAN output and represent the annual average of monthly jobs; thus, one job may represent one job lasting 12 months or two jobs lasting 6 months each. Because jobs occurring over multiple years may not represent additional new employment opportunities (for example, one employee working for 2 years represents two jobs), results are presented in the form of annual averages. Total jobs represent direct, indirect, and induced jobs.
- Labor income (earnings) represent all forms of employment income, including employee compensation (wages and benefits) and proprietor income. Total labor earnings include direct, indirect, and induced employment.
- Economic output (gross regional economic output) represents the value of industry production. Total economic output includes direct, indirect, and induced value.
- Due to the minor level of contributions from minerals and forestry resources on BLM-administered lands to the planning area economy, no economic modeling was conducted for minerals and forestry/woodland resources.
- Livestock grazing economic modeling was based on a 10-year average of billed AUMs (from 2010 to 2020) at 55,828 AUMs (BLM 2021c) and a value of production per AUM (ERS 2021).
- The analysis includes the following assumptions for recreation:
 - The recreation analysis is based on total visitation numbers for local and nonlocal visitors (BLM 2021d) using a recreation spending profile from a local area (national forest data from White 2017) as a proxy for spending associated with Monument visitors.
 - Variations in the type of visitation (day or overnight) are larger than changes based on activity type (White 2017). As a result, spending differences by recreation activity are discussed qualitatively in the analysis and are not included in the economic model.
 - Fiscal economic impacts are a result of the public finance and government expenditures. PILT revenue and revenue associated with direct BLM spending on operations and labor support additional expenditures in the local economy. Proposed management would not, however, result in direct or indirect changes to these streams of revenue. In addition, these revenue sources are not tracked separately for the Monument, therefore it is difficult to present New Mexico-specific associated contributions. As a result, these revenue streams are not examined in the IMPLAN model.

Impacts Common to All Alternatives

No quantitative change to the level of recreation use or the quantity of local/nonlocal or day/overnight visitation can be estimated by alternative (see Table 2-1). As a result, economic contributions provided in **Table 3-84**, Regional Economic Contributions—All Alternatives, are the same across alternatives for recreation.

Additionally, because AUMs do not vary across alternatives, livestock grazing economic contributions provided in **Table 3-84**, do not vary across alternatives.

**Table 3-84
Regional Economic Contributions—All Alternatives**

Activity/Use	Type of Impact	Jobs	Labor Income	Value Added
Livestock grazing	Direct	27.9	\$527,953	\$1,524,386
	Indirect	11.2	\$348,617	\$635,818
	Induced	5.6	\$179,409	\$323,791
	Total	39.1	\$1,055,979	\$2,483,990
Recreation (local)	Direct	50.7	\$1,553,250	\$2,106,219
	Indirect	12.2	\$412,907	\$654,966
	Induced	11.5	\$400,890	\$724,315
	Total	72.4	\$2,367,048	\$3,485,500
Recreation (nonlocal)	Direct	208.6	\$5,874,311	\$8,728,439
	Indirect	36.8	\$1,477,387	\$2,345,965
	Induced	38.9	\$1,497,087	\$2,704,980
	Total	280.9	\$8,848,785	\$13,779,384

Sources: BLM 2021c, 2021d; IMPLAN 2019

Alternative A (No Action Alternative)

- Under Alternative A, BLM management would continue to support jobs and income in the study area. Based on current levels of use, a total of 392 jobs and \$12.3 million in labor income are supported by recreation and livestock grazing in the regional economy.

Action Alternatives (Alternatives B through D)

- Under the action alternatives, BLM management would continue to support jobs and income in the study area. Based on current levels of use, a total of 392 jobs and \$12.3 million in labor income are supported by recreation and livestock grazing in the regional economy.

Proposed management by action alternative would result in a reduction in grazing acres in the Doña Ana Mountains allotment, however no associated reduction in AUMs is established in this planning document, therefore no change to the level of economic contributions is modeled here. As discussed under Issue 2, the level of recreation related to different use, as well as the recreation experience, may vary by alternative. As a result, the level of visitation by type of use and the associated spending has potential to be impacted. However, these factors are captured in the model framework utilized for this regional economic contribution analysis.

Cumulative Impacts

Across all alternatives, expenditures associated with recreation, livestock grazing, and direct BLM expenditures would continue to contribute to area jobs and income. The level of jobs supported would

represent a minor contribution to the regional economy (0.07 percent of total jobs under all alternatives). Long-term demand for recreational use of the planning area and the associated socioeconomic activity would increase because of population growth across all alternatives.

Issue 2: How would the alternatives impact social conditions for area residents and visitors?

Summary of Analytical Methods

This analysis focuses on social conditions in the framework of recreation experiences. Nonmarket values estimated through consumer surplus associated with recreation are presented in the affected environment section (see **Table 3-36**). Management actions that result in changes to access to and the quality of recreation opportunities could result in the potential for increases or decreases in nonmarket use values associated with recreation enjoyed by residents and visitors. There is considerable uncertainty about the level of change to recreation visitation levels and the types of opportunities as a result of the alternatives. As such, this analysis qualitatively describes how alternatives would support certain types of recreation experiences and could thereby result in changes to consumer surplus and recreation value for those who favor a given activity. It is important to note that increased recreation opportunities would not necessarily result in proportionate increases in participation and visitor days.

Indicators

- Changes to recreation use types and the quality of recreation experiences

Assumptions

- None

Impacts Common to All Alternatives

The trends of population growth and increasing interest in outdoor recreation are anticipated to continue throughout the life of this RMP. Because of population growth and increasing interest in outdoor recreation, participation numbers and visitation are both expected to increase over time across all alternatives.

Under all alternatives, the goal to produce recreation opportunities that facilitate beneficial outcomes for visitors and community residents, while protecting the Monument's values, would continue to support quality recreation experiences and associated social benefits.

Alternative A (No Action Alternative)

The BLM would continue to manage two SRMAs. Management of motorized transportation and access would continue to include areas closed to OHV use and OHV use limited to designated routes. Under the no action alternative, a variety of recreation activities would continue to contribute to the nonmarket value of recreation in the Monument. Currently, it is estimated that OHV use in the dispersed Organ Mountains area is attributed to 10,000 visitor days and contributes a total nonmarket value of \$581,900 in 2016 (see **Table 3-83**). Areas that permit OHV use would continue to contribute to the nonmarket value associated with OHV recreation.

Action Alternatives (Alternatives B through D)

Motorized access varies across the action alternatives. Compared with Alternative A, Alternative B provides the highest level of OHV closures (269,697 acres), followed by Alternative C (255,870 acres).

Alternative D allows for less areas closed to OHVs compared with Alternative A (239,596 acres). Both Alternatives B and C provide for less motorized use limited to designated routes (226,894 acres and 240,721 acres, respectively), compared with Alternative A. Alternative D provides for slightly more motorized use limited to designated routes compared with Alternative A. As such, recreation stakeholders who value more quiet recreation experiences would be most supported under Alternative B, followed by Alternative C. Alternative D would allow for more areas open to OHV use, and as such, would provide more support for those who value motorized recreation experiences.

While a quantitative change in consumer surplus cannot be estimated by alternative, changes to OHV use could translate to increased visitation for OHV recreation under Alternative D, resulting in the potential for an increase in the value for motorized developed uses and the potential for reduced use and associated value for quiet recreation experiences, such as hiking or wildlife viewing. Compared with Alternative A, Alternative B would result in potential increased visitor days and increased consumer surplus value for those pursuing more passive recreation, such as photography, wildlife viewing, picnicking, hiking, walking, running, and bicycling.

Under the action alternatives, the BLM would manage a varying number of acres and areas as SRMAs. As described in Section 3.16.3, the BLM would manage 66,348 acres as three SRMAs under Alternative B. Fewer acres (45,871 acres) would be managed as three SRMAs under Alternative C and under Alternative D 7,284 acres would be managed as one SRMA. All action alternatives would establish RMZs; where they are established, the RMZs would reduce potential recreational user conflicts, compared with under Alternative A, which would not establish RMZs.

The 2018 Monument Outdoor Recreation Survey indicated that those who recreate near the Doña Ana Mountains unit value attainment of experiences related to exercise, solitude, adventure and excitement, and developing skills (Casey et al. 2018). Management of the Doña Ana Mountains SRMA could impact the quality and attainment of recreational experiences. However, differentiated management between portions of the Organ Mountains and the Doña Ana Mountains SRMAs would promote quiet recreational experiences while reducing opportunities for motorized recreation or shooting in some areas. As a result, impacts on the recreational experience and subsequent value to residents and visitors would not differ across the action alternatives.

All action alternatives would have the same management for the Southern Doña Ana Mountains RMZ; as such, impacts on the recreation experience and subsequent value to residents and visitors would not differ across the action alternatives. For the Northern Doña Ana Mountains RMZ, Alternatives B and C would close the recreation area to OHV use while Alternative D would allow for OHV use on designated roads. All actions alternatives would limit mechanized travel to designated roads and trails.

Because OHV use would be restricted under Alternatives B and C, the recreation experience may be enhanced for those who value quiet recreation. Additionally, restricted OHV use could reduce conflicts between user groups, such as mountain bikers and OHV users. Because mountain biking is a dominant activity around the Doña Ana Mountains, the recreation experience may be enhanced for those who value opportunities to develop skills, experience adventure and excitement, and get physical exercise through mountain biking.

Alternative D would provide more motorized recreation opportunities, compared with Alternatives B and C. This would enhance the recreational experience for those who value motorized recreation and

could result in increased visitor days, resulting in an increase in the consumer surplus and nonmarket value of OHV recreation. For instance, more motorized recreation opportunities could result in enhanced recreation experiences for those who value experiencing adventure and excitement through motorized recreation opportunities. In addition, the use of route designations under Alternative D could result in reduced conflicts between quiet and motorized recreation.

Alternative B would prohibit recreational shooting in the Northern Doña Ana Mountains RMZ, and Alternative C would allow recreational shooting only in designated areas in the Northern Doña Ana Mountains RMZ. These areas would be identified through implementation-level planning. Alternative D would not prohibit recreational shooting in the Northern Doña Ana Mountains RMZ. As such, Alternative D would result in more recreation opportunities for those who value recreational shooting experiences. Compared with Alternative A, Alternative D would provide for the greatest potential increase in visitor days associated with target practice and subsequent increases in the consumer surplus and nonmarket value. Currently, target practice in the dispersed Organ Mountains area is attributed to 625 visitor days and contributes \$45,469 in nonmarket value. Under Alternative D, this current level of nonmarket value would be supported or enhanced.

Compared with Alternative A, Alternative B would provide a more targeted management approach to popular recreation areas. The Non-wilderness portions of the Organ Mountains SRMA would be managed for existing mechanized and non-mechanized (including pedestrian and equestrian) recreational use and would be closed to OHV use. Management focused on these uses could result in an enhanced quality of recreation experience for those who value horseback riding, hiking, walking, and running, compared with under Alternative A.

The 2018 Monument Outdoor Recreation Survey found that visitors most desired an experience to enjoy area wildlife, learn more about the Monument, and enjoy closeness with family and friends (Fix et al. 2018). Because Alternative B includes management for mechanized and non-mechanized recreational use, it would provide more support for experiences that involve enjoying wildlife, compared with Alternative A. The enhanced recreation experience could result in increased visitor days, consumer surplus, and nonmarket values associated with wilderness under Alternative B, and value associated with equestrian and pedestrian use under both Alternatives B and C.

Compared with Alternative A, Alternatives B and C would impact the recreation experience and associated nonmarket value for those pursuing camping opportunities. Overnight camping at Sierra Vista and Baylor Trailheads would be prohibited under Alternative B, due to health and safety concerns, and would be limited to 2 days under Alternative C. Alternative B would remove opportunities for camping and thereby impact camping experiences, compared with Alternative A. By limiting camping to 2 days at these locations, Alternative C would result in an increased level of visitors, because more diverse groups of campers would come into the area. This could result in increased visitor days and increased consumer surplus and nonmarket value associated with camping.

Under Alternative D, the Organ Mountains SRMA would be undesignated. However, this would not result in a decrease or increase in recreation use; therefore, it would not directly impact the social conditions for area residents and visitors.

Alternatives B through D would result in development of educational methods, such as signage, brochures, or other means, to promote a culture of surface travel user stewardship and conservation of the landscape

during user travel. Compared with Alternative A, all action alternatives would provide for an enhanced recreation experience through these educational methods, because they would support opportunities to learn about the Monument. According to the 2018 Monument Outdoor Recreation Survey, respondents indicated the desire for experiences to learn about the Monument as high or very high (Fix et al. 2018).

Cumulative Impacts

The BLM anticipates increased visitation to the Monument to continue over the next 20 years. Population growth is expected to continue for communities adjacent to the Monument. These trends are likely to increase the demand for quality recreation experiences in the Monument.

Reasonably foreseeable projects within the planning area include several maintenance and improvement projects at the Dripping Springs Natural Area, Sierra Vista Trailhead, Cox Visitor Center and Compound, Soledad Canyon Day Use Area, Aguirre Spring National Recreation Area, and the Monument. Reasonably foreseeable projects in the area that will improve recreation and visitor use, such as maintenance to parking lots, toilet facilities, and trail accessibility, will likely cause an increase in recreational use and travel to the planning area.

These projects would cumulatively impact the access to and quality of recreation experiences. Improved amenities, access, and conditions at recreation sites could result in increased desirability for recreation experiences at these locations, and result in increased visitor days and nonmarket value. For instance, development of trails accessible to disabled populations at various locations could enhance the quality of recreation experiences by improving accessibility and making these areas more desirable for communities to visit. Conversely, increased use resulting from such projects could result in user conflicts and crowding or impact the desirability of certain recreational experiences. Overall, these reasonably foreseeable projects would cumulatively contribute to the societal benefits and social values associated with recreational experiences provided by the Monument.

Issue 3: How would the alternatives impact the benefits to people provided from natural areas?

Summary of Analytical Methods

To assess how the alternatives would impact the benefits to people provided from natural areas, this analysis provides a qualitative discussion of how protection of species, habitat, and wildlife through special designations would result in support for or enhancement of nonmarket and cultural values.

Indicators

- Acres of protected areas such as special designations

Assumptions

- None

Impacts Common to All Alternatives

While the acres managed as special designations vary by alternative, all alternatives offer management conducive to protection of natural areas. The Dingell Act constrains acres of wilderness and requires agencies to remove overlapping special designations. As such, the acres of special designations differ by alternative, but there is ultimately a minimal change across alternatives for protected natural areas. Management should generally be the same in terms of the level of protection being applied.

Across alternatives, managing and maintaining the open spaces associated with wilderness, the NNL, and the NHT would continue to support values identified in the affected environment under “Nonmarket Values and Ecosystem Services.” As described in the affected environment section, natural amenities and open space, including specially designated lands, can enhance property values. Because acres of protected areas would remain the same across all alternatives, management would provide continued open spaces that benefit adjacent property values.

As described in **Section 3.2.3**, designated areas such as ACECs, SRMAs, wilderness areas, or other management that restricts certain activities, such as recreational use and ROW developments would provide continued support for associated ecosystem services, such as biodiversity and habitat.

Alternative A (No Action Alternative)

The BLM would continue to manage three ACECs for protection of biological, scenic, and cultural values. The BLM would also close roads, limit vehicle access, and exclude new ROW authorizations. As a result, identified values associated with these ACECs would continue to be supported. The three proposed ACECs (Broad Canyon, East Potrillo Mountains, and Picacho Peak) would not be designated; however, they would continue to be managed according to Proclamation 9131 and other applicable management.

Action Alternatives (Alternatives B through D)

The overall acres of designated wilderness, NNLs, RNAs, and national scenic and historic trails would remain the same across all action alternatives. The number of ACECs designated varies by alternative; however, there would be minimal difference in impacts on the level of benefits provided by these natural areas across action alternatives. This is because these areas are entirely within designated wilderness areas or they would receive special management to protect Monument resources, objects, and values, including scenic, cultural, and biological resource values. As such, these areas would still be protected and managed for the untrammeled character and naturalness; they would exclude developments or permanent improvements and provide opportunities for solitude or primitive and unconfined recreation. Alternative D would undesignate all ACECs; however, it would be managed under the direction set forth in Proclamation 9131 and through existing wilderness designations. As a result, the action alternatives would result in minimal impacts on the level of protections for natural areas and the benefits provided by protected natural areas.

Biodiversity (flora and fauna) and habitat (wilderness characteristics) are identified as supporting ecosystem services with high and moderate value in the study area. Support for these key services would vary by alternative. Overall, Alternative B would have the highest overlap of SHSs and specially designated areas (see **Section 3.2.3**) and would provide the greatest protections to support for biodiversity and habitat. Alternative C would have less overlap of SHSs and specially designated areas. Alternative D would have the least overlap and would provide less support for biodiversity and habitat.

Alternative B would also provide the most protection for special status species, followed by Alternatives C and D. Alternative B would provide the most acreage closed to motorized use, followed by Alternatives A, C, and D. It is important to note that while Alternative B would provide the most support for biodiversity and habitat-related ecosystem services, recreation is also a cultural service with high value in the study area. Impacts on this service are discussed under *Issue 2*.

Cumulative Impacts

Under all alternatives, the Monument's designation language and areas managed to preserve wilderness character per the Dingell Act would continue to support values associated with special designation areas in the region. As statewide and local economies shift toward the services sector and nonlabor sources of income, in the planning area overall, there is an increased emphasis on the role of public land and its associated values enhanced by special designations.

3.22 ENVIRONMENTAL JUSTICE

3.22.1 Key Points

- The planning area counties of Doña Ana, Luna, and El Paso all contain environmental justice populations due to the high percentage of those identifying as Hispanic or Latino descent as well as the percentage of individuals whose income is less than 200 percent of the federal poverty level. Additionally, there are 13 federally recognized Tribes from across New Mexico, Texas, Arizona, and Oklahoma who have ancestral and cultural ties to the lands that are now the Monument. Two non-federally recognized Tribes reside near the Monument that may have historical and present connections with locations and resources. Under all alternatives, the Monument's designation would contribute to the regional economy and boost job creation. Positive economic contributions would occur under all alternatives and would represent a benefit for all communities, including environmental justice communities.

3.22.2 Affected Environment

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994), requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the US. The executive order requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations" (Executive Order 12898, 59 *Federal Register* 7629, 1994).

The existence of disproportionately high and adverse human health and environmental effects from the management of BLM-administered lands has two components: 1) identification of minority, low-income, and Native American communities; and 2) an analysis of proposed actions to determine whether significant impacts from BLM activities exist. This section provides information to screen the study area to identify the presence and location of any environmental justice populations. Identification of environmental justice populations allows for evaluation of potential adverse impacts on these populations.

Additional information is available in Section 2.3.2, Environmental Justice, of the AMS (BLM 2022a) and Section 5.1 of the OMDPNM Socioeconomic Baseline Report (BLM 2023c).

Minority Populations

Subsequent to publication of the executive order, the Council on Environmental Quality, part of the Executive Office of the President, issued guidance for considering environmental justice within the National Environmental Policy Act process (CEQ 1997). This guidance defines minorities as individual(s) who are members of the following population groups: American Indian or Alaska Native; Asian or Pacific

Islander; Black, not of Hispanic origin; or Hispanic. The guidance further defines a “minority population” as follows:

The total minority populations are defined as the total population minus the population of those who identify as white, of non-Hispanic descent. Minority populations should be identified where either 1) the minority population of the affected area exceeds 50 percent, or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

For this analysis, the BLM used a threshold analysis and meaningfully greater analysis. The 50 percent threshold analysis involves identifying any counties with a total minority population of 50 percent or greater. For the meaningfully greater analysis, the BLM used 110 percent of the minority percentage of the geographic reference area as the threshold for meaningfully greater (BLM 2022d). For the purpose of this analysis, “meaningfully greater” is defined as more than 10 percent difference from the respective state reference population. In this case, 110 percent of the total minority population for New Mexico and Texas (the reference areas) are 70.4 percent and 65.2 percent, respectively. Relevant Tribal groups are also noted.

Table 3-85 shows the racial and Hispanic status composition of the three counties that make up the study area and the composition of New Mexico and Texas. “Total minority population” is defined as all persons who self-identify as Hispanic or as a race other than white (that is, all persons other than non-Hispanic white). Doña Ana, Luna, and El Paso Counties are all greater than 50 percent minority populations, primarily due to the high percentage of those identifying as Hispanic or Latino (73.6 percent, 72.0 percent, and 88.5 percent, respectively).

In addition to county-level data, the BLM examined census tract-level data to identify populations that may qualify for further environmental justice analysis at a finer geographic scale. **Figure 3-17**, Minority Populations for Environmental Justice Consideration, below, shows that the majority of census tracts in the study area have a minority population greater than 65 percent.

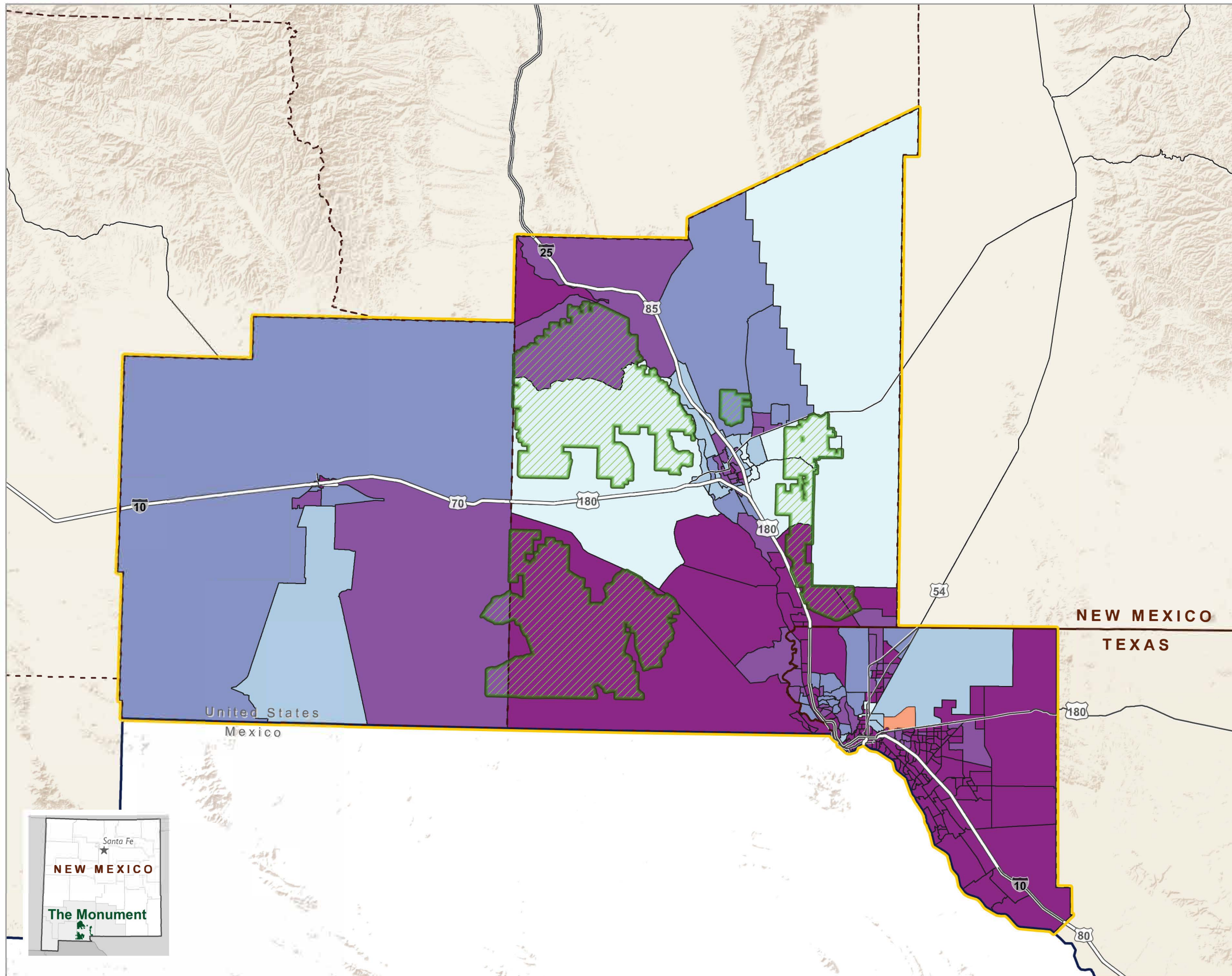
As described in **Section 3.20**, Tribal Interests, there are 13 federally recognized Tribes from across New Mexico, Texas, Arizona, and Oklahoma who have ancestral and cultural ties to the lands that are now the Monument. Additionally, two non-federally recognized Tribes reside near the Monument that may have historical and present connections with locations and resources. Historically, these Tribes used numerous places in the Monument for natural resources foraging, hunting subsistence, habitation, travel routes, and spiritual and religious ceremonies. Practices that continue today include, but are not limited to, visiting these areas for plant and mineral gathering, traditional camp and ceremonial sites, and burial sites.

Additionally, persons who self-identify as Native American or Alaska Native for the purposes of Census Bureau data were included in the analysis of minority populations.



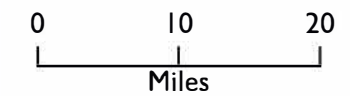
Figure 3-17
Minority Populations for
Environmental Justice Consideration
 Percent of the population identifying as a racial and/or ethnic minority by Census Tract

- 22.9 - 45%
- 45.1 - 65%
- 65.1 - 75%
- 75.1 - 85%
- 85.1 - 100%
- No data
- Organ Mountains-Desert Peaks National Monument
- Study area



NEW MEXICO
 TEXAS

United States
 Mexico



Source: BLM GIS 2022, US Census GIS 2022, Department of the Interior, Bureau of Land Management, Las Cruces District Office December 29, 2023, OrganMtnsRMP_AE_EJ.aprx
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum



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Table 3-85
Minority Populations for Environmental Justice Consideration (2021)

Geography	Total Population	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino of Any Race	Not Hispanic or Latino (Total)	Not Hispanic or Latino (White Only)	Total Minority Population ¹	Meets “ Meaningfully Greater” Environmental Justice Threshold ²
Overall State													
New Mexico	2,109,366	1,364,638	44,792	197,712	34,313	1,705	204,742	261,464	1,046,411	1,364,638	759,917	1,349,994	N/A
	—	64.70%	2.10%	9.40%	1.60%	0.10%	9.70%	12.40%	49.60%	50.40%	36.00%	64.00%	
Texas	28,862,581	18,566,027	3,499,862	147,892	1,452,713	24,608	2,019,394	3,152,085	11,479,932	17,382,649	11,745,032	17,117,549	N/A
	—	64.30%	12.10%	0.50%	5.00%	0.10%	7.00%	10.90%	39.80%	60.20%	40.70%	59.30%	
Study Area Counties													
Doña Ana County	218,157	147,372	4,171	2,813	2,575	195	31,652	29,379	150,338	67,819	57,666	160,491	—
	—	67.60%	1.90%	1.30%	1.20%	0.10%	14.50%	13.50%	68.90%	31.10%	26.40%	73.60%	Yes
Luna County	25,282	18,852	457	232	261	16	1,226	4,238	17,302	7,980	7,077	18,205	—
	—	74.60%	1.80%	0.90%	1.00%	0.10%	4.80%	16.80%	68.40%	31.60%	28.00%	72.00%	Yes
El Paso County	860,485	512,529	27,184	5,161	10,196	1,319	128,588	175,508	713,245	147,240	98,627	761,858	—
	—	59.60%	3.20%	0.60%	1.20%	0.20%	14.90%	20.40%	82.90%	17.10%	11.50%	88.50%	Yes

Source: US Census Bureau 2022c

¹ The total minority population is calculated based on the total population minus those identifying as white, of non-Hispanic descent.

² Calculated based on comparison with the state

Consultation through the years has demonstrated a wide range of Tribal interests are often associated with BLM-administered land. These include concerns about potential impacts on resources associated with practices such as gathering medicinal plants, native foods, and other natural products; access to traditional hunting and ceremonial areas; the availability of water and healthy plant and animal populations; and potential impacts and threats to Native American archaeological sites, sacred sites, and traditional cultural properties. Tribal uses of BLM-administered land are not amenable to market valuation; however, they can be considered a type of nonmarket value.

Traditional concerns of many Tribal communities focus on the treatment of human remains associated with archaeological sites and the collection of plants. In the Monument planning area, members of the Tortugas Pueblo participate in an annual pilgrimage through Doña Ana County to the top of A-Mountain outside Las Cruces to hold mass. This is part of the annual religious observance that takes place in December, the Tortugas Pueblo Fiesta of Our Lady of Guadalupe. The route of this 4-mile pilgrimage was nominated as a traditional cultural property by the New Mexico State Historic Preservation Officer in 2016 (NPS 2016).

Low-Income Populations

The Council on Environmental Quality's 1997 guidance states that "low income" should be determined using the annual statistical poverty thresholds from the Census Bureau. That is, persons living under the poverty income threshold are potentially of concern. The guidance does not specify how to identify a low-income population; however, the BLM defines low-income individuals as people whose income is less than or equal to twice (200 percent) the federal "poverty level" (BLM 2022d).

For this analysis, the BLM used a 50 percent threshold analysis and a low-income threshold analysis, where low-income populations are greater than 50 percent of the area's total population, or where the low-income population percentage is meaningfully greater than the percentage in the general population or an appropriate comparison area. For the 50 percent threshold analysis, areas in which the percentage of the population living at or below 200 percent of the poverty line exceeds 50 percent are considered low-income populations. For the low-income threshold analysis, any study area that has a low-income percentage of the population equal to or higher than the reference area is identified as having a low-income environmental justice community of concern.

Table 3-86 presents the median household income, poverty status, and low-income status in 2021 for the study area counties and the states in which they reside. All study area counties fall below their respective state's median household income. Luna County has the lowest median household income of \$33,914, which is 62.7 percent of New Mexico's median household income. Luna County, New Mexico, was the only study area county that meets the 50 percent threshold analysis criteria, with a low-income population of 55.7 percent. This means 55.7 percent of the population (for whom poverty status is determined) in Luna County lives below twice the federal poverty level. In addition, all three of the counties meet the meaningfully greater analysis criteria to qualify as an environmental justice population in terms of low-income status. This is because all three counties have low-income populations that exceed the respective state low-income percentages (see **Table 3-86**).

Table 3-86
Low-Income Populations for Environmental Justice Consideration (2021)

Geography	Environmental Justice Indicators (Poverty Status) as a Percentage of Total Population			
	Median Household Income (2021\$)	Poverty Status (%)	Low-income Status (%) ¹	Meets “Meaningfully Greater” Environmental Justice Threshold ²
Overall State				
New Mexico	\$54,020	18.3	39.1	N/A
Texas	\$67,321	14.0	32.6	N/A
Study Area Counties				
Doña Ana	\$47,151	23.2	46.7	Yes
Luna	\$33,914	26.3	55.7	Yes
El Paso	\$50,919	19.3	44.8	Yes

Sources: US Census Bureau 2022c, 2022f, 2022g

¹ Total low-income population is calculated by taking the estimate for individuals with income below 200 percent of the poverty level as a percentage of the total population for whom poverty status is determined.

² Calculated based on comparison with the state. For the low-income threshold analysis, any study area that has a low-income percentage of the population equal to or higher than the reference area is identified as having a low-income environmental justice community of concern.

In addition to county-level data, the BLM examined census tract-level data to identify populations that may qualify for further environmental justice analysis at a finer geographic scale. **Figure 3-18**, Low-Income Populations for Environmental Justice Consideration, below, shows that the low-income populations are scattered throughout the study area.

Colonias

Section 3.21.2, Communities, provides information on the colonias located throughout the study area counties. As described in **Section 3.21.2**, study area colonias are characterized by varying socioeconomic and geographic conditions, ranging from historic developments to unincorporated subdivisions of substandard housing with limited basic services. It is important to consider these communities in the context of environmental justice, as colonias are often characterized by conditions that result in less ability to compensate for potential changes resulting from land management decisions. Such conditions include but are not limited to lack of water infrastructure and wastewater/sewage services, limited access to adequate housing, transportation barriers, and public health challenges.

Additional Data

Select additional demographic indicators can provide supplemental information about potentially vulnerable populations, or those who may benefit from targeted outreach efforts. **Table 3-87**, below, provides information on the language spoken at home, age, and education level.

Table 3-87
Demographic Indicators (2021)

Indicator	Description	Doña Ana County	Luna County	El Paso County	New Mexico	Texas
Linguistically isolated population (%)	Percentage of households in which no one age 14 and over speaks English “very well” or speaks English only	10.5	11.9	21.7	5.3	7.1
Population with less than a high school education (%)	Percentage of individuals aged 25 and over with less than a high school degree	19.3	29.2	20.2	13.5	15.1
Population under age 5 (%)	Percentage of individuals under age 5 as a fraction of the population	6.2	7.7	7.2	5.7	6.8
Population over age 64 (%)	Percentage of individuals over age 64 as a fraction of the population	15.7	20.3	12.2	17.5	12.5

Sources: US Census Bureau 2022a, 2022h

The EPA developed an environmental justice mapping and screening tool called EJSCREEN. Based on national data, EJSCREEN combines 11 environmental and six demographic indicators in maps and reports. **Table 3-88** presents the raw data for the 11 environmental indicators outlined by the EPA. Presenting the raw data allows for a comparison of the study area with both the state and national averages. By incorporating these environmental indicators, EJSCREEN is able to identify potential populations subjected disproportionately to adverse human health or environmental effects. The comparison with state and national averages indicates which communities may potentially be more susceptible to these adverse effects. Please note that EJSCREEN is not recommended as a method to definitively identify an area as an environmental justice community. EJSCREEN indicators are varied in terms of quality, which limits the information they can provide about potential impacts.

Almost all environmental indicators for all study area counties outperform the national averages in all categories except for ozone, air toxics cancer risk, Superfund site proximity, and risk management plan proximity. This indicates that the environmental quality is generally better in the study area than the nation as a whole. At the county level, there are several sites reporting to the EPA. All study area counties exceed the national and state averages for ozone. As shown in **Table 3-88**, above, El Paso County, Texas, exceeds the national and state averages for air toxics cancer risk and risk management plan proximity. El Paso County exceeds the state averages for air toxics cancer risk (by 71 percent) and proximity to risk management plan facilities by 2.2 percent. This indicates communities within El Paso County may have an increased potential for exposure to toxic air pollutants with known carcinogens and a slightly higher presence of chemical-intensive facilities, compared with other study area counties and the nation.

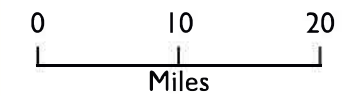
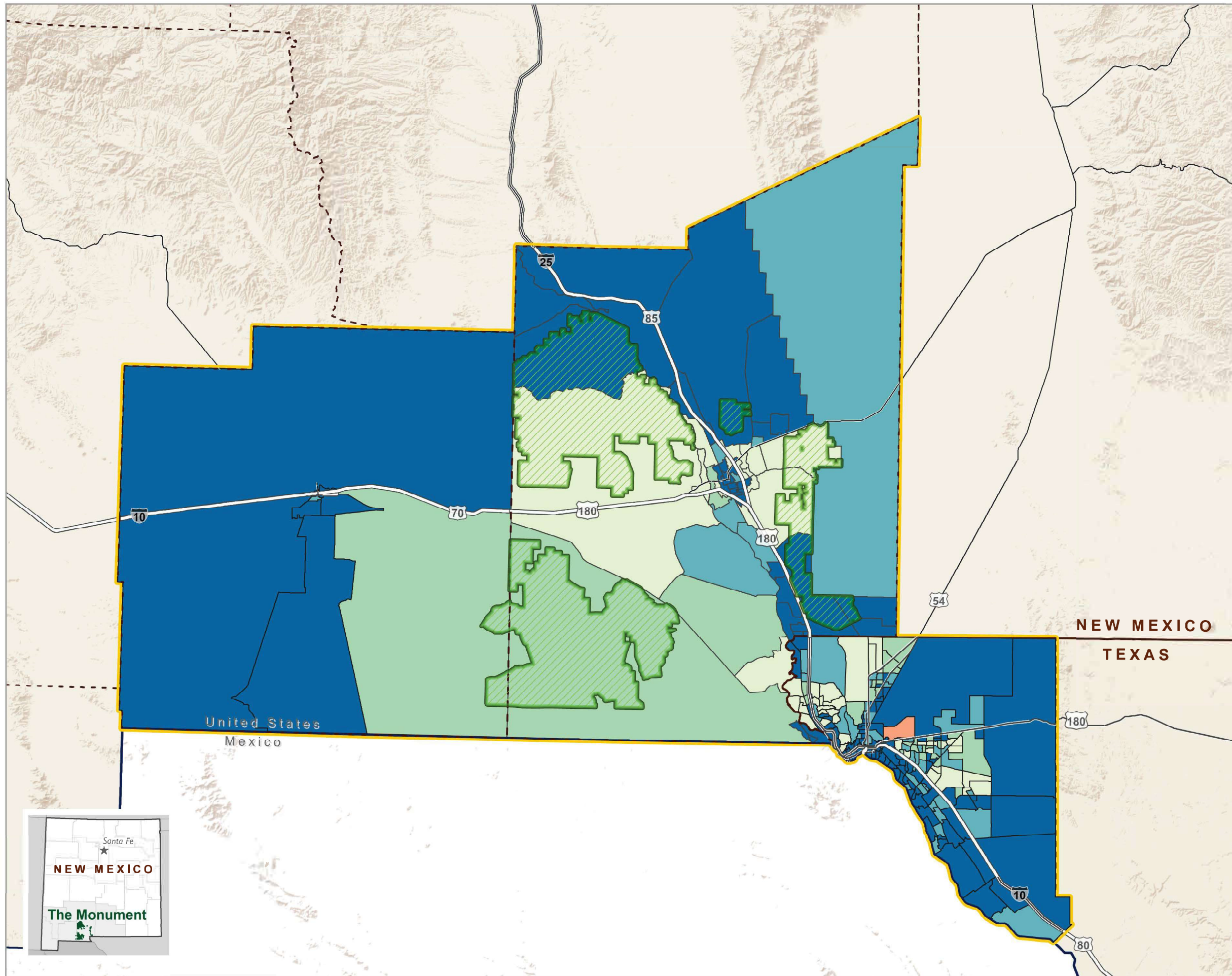
Doña Ana County exceeds the state average for proximity to Superfund sites by 61.5 percent. It has one site listed on the Superfund National Priorities List and two hazardous waste treatment, storage, and disposal facilities. It should be noted that with proximity-based indicators, proximity alone may not be representative of any actual risk or even exposure.



Figure 3-18
Low-Income Populations for
Environmental Justice
Consideration

Low-income population at the Census Tract level

- 5 - 32.5%
- 32.6 - 39%
- 39.1 - 50%
- 50.1 - 96.3%
- No data
- Organ Mountains-Desert Peaks National Monument
- Study area



Source: BLM GIS 2022, US Census GIS 2022, Department of the Interior, Bureau of Land Management, Las Cruces District Office December 29, 2023, OrganMtnsRMP_AE_EJ.aprx
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum

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**Table 3-88
County-Level Environmental Indicators (2021)**

Indicator	Description	Doña Ana County	Luna County	El Paso County	New Mexico	Texas	US
Environmental Indicators							
Particulate matter (particulate matter less than 2.5 micrograms per cubic meter)	Particulate matter less than 2.5 micrograms per cubic meter in air, annual average 2013. Source: EPA Office of Air and Radiation.	5.66	4.83	6.86	5.16	9.11	8.08
Ozone (parts per billion)	Ozone summer seasonal average of daily maximum 8-hour concentration in air in parts per billion, 2013. Source: EPA Office of Air and Radiation.	69	61.6	68.1	64.7	64.6	61.6
NATA* diesel particulate matter in micrograms per cubic meter	Diesel particulate matter level in air in micrograms per cubic meter. Source: EPA 2017 National Air Toxics Assessments.	0.182	0.117	0.190	0.194	0.218	0.261
NATA* air toxics cancer risk (risk per million)	Lifetime cancer risk from inhalation of air toxics, as risk per lifetime per million people. Source: EPA 2017 National Air Toxics Assessment.	30	20	44	18	28	25
NATA* respiratory hazard index	Air toxics respiratory hazard index (the sum of hazard indices for those air toxics with reference concentrations based on respiratory endpoints, where each hazard index is the ratio of exposure concentration in the air to the health-based reference concentration set by the EPA). Source: EPA 2017 National Air Toxics Assessments.	0.24	0.20	0.22	0.21	0.30	0.31
Traffic proximity and volume (daily traffic count and distance to the road)	Count of vehicles per day (average annual daily traffic) at major roads within 500 meters (or nearest one beyond 500 meters), divided by distance in meters. Calculated from US Department of Transportation National Transportation Atlas Database, Highway Performance Monitoring System, 2014 (retrieved April 2015).	71	33	160	84	150	210
Lead paint indicator (% pre-1960s housing)	Percentage of housing units built before 1960, as an indicator of potential exposure to lead paint. Calculated from the Census Bureau's American Community Survey 2011–2015.	0.11	0.22	0.17	0.19	0.17	0.30

3. Affected Environment and Environmental Consequences (Environmental Justice)

Indicator	Description	Doña Ana County	Luna County	El Paso County	New Mexico	Texas	US
Superfund proximity (site count per kilometer distance)	Count of proposed and listed national priority list sites within 5 kilometers (or nearest one beyond 5 kilometers), each divided by distance in kilometers. Count excludes deleted sites. Source: Calculated from EPA CERCLIS database (retrieved December 5, 2016).	0.21	0.011	0.015	0.14	0.085	0.13
Risk management plan proximity (facility count per kilometer distance)	Count of risk management plan (potential chemical accident management plan) facilities within 5 kilometers (or nearest one beyond 5 kilometers), each divided by the distance in kilometers. Calculated from the EPA risk management plan database (retrieved March 2017).	0.21	0.013	0.82	0.15	0.63	0.43
Hazardous waste proximity (facility count per kilometer distance)	Count of treatment storage and disposal facilities (hazardous waste management facilities) within 5 kilometers (or nearest one beyond 5 kilometers), each divided by the distance in kilometers. Calculated from the EPA Resource Conservation and Recovery Act Information database (retrieved January 2017).	0.60	0.017	0.58	0.73	0.75	1.9
Underground storage tanks (count per square kilometer)	Count of underground storage tanks (a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground) per square kilometer. The federal underground storage tank regulations apply only to underground storage tank systems storing either petroleum or certain hazardous substances.	2.1	2.1	1.9	3.3	2.3	3.9
Wastewater discharge indicator	The EPA Risk Screening Environmental Indicators modeled toxic concentrations at stream segments within 500 meters, divided by the distance in kilometers. Calculated from the Risk Screening Environmental Indicators modeled toxic concentrations to stream reach segments (created January 2017).	0.47	0.0004	0.37	0.47	0.91	22.0

Source: EPA 2023c

Note: *Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the EPA's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure; any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at <https://www.epa.gov/haps/air-toxics-data-update>.

3.22.3 Environmental Consequences

Issue 1: Would proposed management result in environmental justice impacts (disproportionally high and adverse effects on minority, low-income, or Tribal populations or communities)?

Summary of Analytical Methods

As described in **Section 3.22.2**, above, Doña Ana County and Luna County, New Mexico, and El Paso County, Texas, meet both the minority and low-income thresholds and are considered environmental justice communities of concern. The analytical methods used to identify environmental justice communities are described in **Section 3.22.2**. The temporal scale of the analysis is the life of the plan.

To assess whether the alternatives would disproportionately affect minority communities negatively, the BLM assessed whether any of the alternatives would result in any adverse human or environmental impacts on any populations. This section relies on the analysis in other resource sections. The BLM then considered whether any of the identified environmental justice communities are likely to suffer disproportionate adverse effects in terms of resources and their use. If users of a particular resource are predominately a community of environmental justice concern, then there is a higher likelihood of disproportionate adverse impacts on that community.

Indicators

- Disproportionally high and adverse impacts

Assumptions

- None

Impacts Common to All Alternatives

Under all alternatives, there is no indication that any of the BLM actions proposed in any of the alternatives would cause disproportionate effects on minority and low-income populations in the planning area. All alternatives would work within the framework of the Monument's Proclamation. As described in the affected environment section, monument designations have been shown to contribute to the regional economy and boost job creation, and the Monument is an economic driver for the study area, especially Doña Ana County. Positive economic contributions would occur under all alternatives and would represent a benefit for all communities, including environmental justice communities.

3.23 PUBLIC SAFETY

3.23.1 Key Points

- Under all alternatives, the BLM would manage public health and safety with human life and welfare as a key priority.
- Management under the action alternatives would improve public safety by reducing user conflicts, particularly related to recreational shooting near popular recreation areas, and by better addressing anticipated future risks from wildfire and increased visitation.

3.23.2 Affected Environment

Public safety concerns in the planning area relate to abandoned mines, wildfires, transportation and traffic, illegal dumping, and recreational shooting. These concerns all have direct connections with other components within the Monument. Various management decisions potentially impacting public safety are

found in the Mimbres RMP (BLM 1993), the LCDO Fire Management Plan (BLM 2010), and the Guidance for Implementation of Federal Wildlife Fire Management Policy (DOI 2009).

Additional information is available in Section 2.3.4, Public Safety (abandoned mines, debris flows, and hazardous materials) of the AMS (BLM 2022a).

Abandoned Mines

The BLM inventoried 142 mining features within the Monument. See Table 2.77 and Figures 2.68 through 2.71 in the AMS for more details on these features (BLM 2022a).

Visitors can encounter these abandoned mine features and may be exposed to hazards at these sites, including the following hazards:

- Open and unstable shafts, adits, drifts, pits, tailings piles, wells, or other excavations
- Dilapidated and unstable buildings or other structures
- Collapsed buildings or other structures
- Mining implements or construction debris
- Hazardous or toxic materials

In addition, these abandoned mines pose a threat to public safety from the potential for hazardous materials and the outflow of acidic water from mine tailings (acid mine drainage). No known environmental hazards associated with abandoned mines are reported within the planning area. However, based on the area's historical mining operations, the presence of hazardous materials may be likely. Acid mine drainage is also possible, with potential impacts on the water quality and downstream users (BLM 2022e).

The BLM's Instruction Memorandum IM-2000-182, Mitigating and Remediating Physical Safety Hazards at Abandoned Mine Land Sites, establishes policy, priorities, and plans to support the elimination or reduction of physical hazard and safety risks at abandoned mine lands. The BLM's long-term goal is to eventually identify and address hazards at every known abandoned mine land site on public land. Since resources are unavailable to accomplish this goal in the short term, the immediate priority is to clean up those abandoned mines in locations where a death or injury has occurred and the site has not already been addressed, or at those sites that are on or in immediate proximity to developed recreation sites and areas with high visitor use.

Wildfires

Wildfires present the potential for Monument users to become stranded. They also pose a risk to developed recreation areas and local communities and can cause poor air quality. In the Monument, the BLM conducts annual prescribed burns at the Dripping Springs Natural Area to develop a safety zone in case of a wildfire. Other public safety concerns include the Aguirre Spring National Recreation Area, which only has one road in and out of the recreation area. Additional information on wildland fire ecology and management is described in **Section 3.5**.

Recreation

With an increase in the number of users inside the Monument, there is also an increase in the risk to public safety. An increase in users in the area means more cars and other transportation on the trails and

roads, creating more traffic. Recreation areas, such as the Doña Ana Mountains SRMA, Dripping Springs Natural Area, and Aguirre Spring National Recreation Area, are heavily visited with high numbers of vehicles every day. All areas that include specific hazards are well signed with turn marks and speed limits, according to the New Mexico Department of Transportation (NMDOT 2017).

With the consistent increase in recreationists visiting the Monument, there is also a potential for an increase in recreational shooting-related conflicts. Recreational shooting occurs at organized shooting ranges; the Butterfield Overland Trail Shooting Range is on public land leased to Las Cruces under the Recreation and Public Purposes Act. Open shooting also occurs in dispersed, informal locations throughout the planning area. “Unofficial” target ranges are known to occur within the area, primarily near Las Cruces; however, one site was identified near Anthony. Sites identified to have public safety issues with regard to recreational shooting are the East Mesa gravel pits, the La Union radio facilities, the northeast side of Twin Peaks, the Hill gravel pits, the vicinity of Community Pit 1, and areas in the greater Doña Ana Mountains (BLM 2022a).

Shooting debris left behind by recreational shooters also poses safety risks and can be a contamination hazard. There are reports of trash being left behind, including homemade targets and empty cartridges.

Illegal Dumping

Some illicit dumping occurs in the Monument. Much of the illicit activity is intentional, small-quantity waste dumping that may include hazardous substances, household waste, petroleum products, solid waste, and agricultural materials. Illicit dumping may occur anywhere in the Monument; however, it is generally concentrated around recreation areas and along roadways. These dumping incidents may not fit the specific category of hazardous waste dumping, but the dumped materials are usually screened for hazardous components before the materials are removed and disposed of properly.

The BLM LCDO has taken an active approach toward remediating the overall problem of illegal dumping. In 2010, the LCDO began an assistance agreement with Doña Ana County to fund the Doña Ana County Illegal Dumping Partnership made up of the City of Las Cruces, Doña Ana County, South Central Solid Waste Authority, Las Cruces Homebuilders Association, and local law enforcement. The partnership has been successful in educating the public about the problems of illegal dumping, remediating illegal dump locations, harvesting real data, mapping the data, and using the data to find and remediate dump locations.

Additional information is available in Section 2.3.4, Public Safety (abandoned mines, debris flows, and hazardous materials), of the AMS (BLM 2022a).

3.23.3 Environmental Consequences

Issue 1: How would abandoned mining sites, increases or decreases in wildfire risk and recreational risk, and exposure to contaminants impact the safety of the Monument’s users and local communities?

Analytical Methods

Analysis Area

The analysis area for public health and safety includes the entire planning area.

Indicators

- Number of abandoned mining sites cleaned up
- Increase or decrease in wildfire risk
- Increase or decrease in recreational risks
- Increase or decrease in exposure to contaminants

Assumptions

- The potential for risk to visitor safety would increase with increasing numbers of BLM-administered land users.
- Activities and resources available in and around the planning area would continue to be important to the health and safety of current and future residents.
- All new hazardous materials and waste sites would be identified and characterized.
- Resource development activities would identify any possible generation of hazardous waste.
- The BLM's Hazard Management and Resource Restoration Program would respond to all hazardous material releases on BLM-administered lands. Emergency cleanup actions would be implemented on sites posing a substantial threat to the public and the environment.

Impacts Common to All Alternatives

The BLM's Instruction Memorandum IM-2000-182, Mitigating and Remediating Physical Safety Hazards at Abandoned Mine Land Sites, establishes policy, priorities, and plans to support the elimination or reduction of physical hazard and safety risks at abandoned mine lands. Under all alternatives, the BLM would clean up priority sites as funding and capacity allow, which would decrease the risk of injury for Monument users. The cleanup of these priority sites is part of BLM Instruction Memorandum IM-2000-182, as described in **Section 3.23.2**, above.

All alternatives would prioritize interagency coordination for law enforcement, search-and-rescue response, firefighting activities, and communications. This would reduce the risk of potential harm to public health and safety due to wildland fires and emergencies.

All alternatives would continue prescribed burns or other fuels reduction treatments in Dripping Springs. While these treatments would protect recreationists from wildfires, prescribed fires would have short-term impacts on air quality with the potential to affect Monument users and adjacent communities. These impacts would be minimized through compliance with the New Mexico Smoke Management Program, as described in **Section 3.11**, Air Quality. All alternatives would also focus treatments on communities and surrounding areas with the potential for escaped fire or loss of life or property. These focus areas contain hazardous fuels buildup, and treating them would reduce the risk and cost of wildfire.

Under all alternatives, traffic would increase within the Monument due to forecasted increases in recreational use. The increase in traffic could result in an increased risk of accidents within the Monument. The magnitude, duration, and spatial extent of impacts due to increased traffic would vary based on the location, extent of transportation infrastructure, and management.

Climate change has the potential to increase the risk of wildfires in the Monument under all alternatives. The BLM would continue to implement vegetation treatments and prescribed burning in and around the Monument. Fire management is also a priority for adjacent agencies and landowners. These treatments,

both on and adjacent to the Monument, would reduce the risk of wildfire on Monument users and local communities.

Alternative A (No Action Alternative)

Though Alternative A would not improve upon current public health and safety risks due to wildfire, systems are currently in place to limit these risks. Current management includes fire safety measures put in place and access roads to most recreational areas.

The current management plan does not include specific management direction related to the increase of recreationists in the Monument. Transportation in and out of the Monument and to different areas of the Monument would continue, potentially causing impacts on public health and safety in the future due to accidents in the Monument. Over the long term, there is the potential for an increased risk of accidents throughout the Monument due to recreational conflicts and increased visitor use.

Alternative A does not include specific management direction related to recreational shooting debris in the Monument, which may increase public health and safety risks due to waste. Currently, there are specific shooting areas that recreationists should use and trash receptacles to limit safety risks to the public. Because the waste would continue to be managed as it is now, there would continue to be a buildup in waste in these shooting areas. Similarly, long-term camping at the Sierra Vista and Baylor Canyon trailheads would continue to present public safety risks from trash, other waste, and conflicts with day users.

Action Alternatives (Alternatives B through D)

Under Alternatives B, C, and D, the BLM would develop a district-wide fire management plan that covers the planning area. The BLM would also maintain active fire prevention and educate the public to reduce the threat of human-caused fire ignitions. Compared with Alternative A, these management actions would reduce the likelihood of risks to public health due to wildfires in areas of high public use, such as Dripping Springs.

Under Alternatives B, C, and D, the BLM would place signs and safeguards on trails, sidewalks, and facilities to identify potential hazards, including abandoned mining sites and areas of potential conflicts between recreationists, travel and transportation, and livestock. In comparison with Alternative A, these alternatives would implement management to regulate increased recreational use over time, mitigating the risk to the public due to travel and transportation and other recreational conflicts.

Under Alternatives B, C, and D, the BLM would determine appropriate levels of access for all travel modes to the Monument to reduce user conflicts. The BLM would manage travel modes in and out of the Monument, increasing the ability to manage more visitors and establishing boundaries for when visitor use at the Monument increases (see *Transportation and Access* in **Section 3.18**). Compared with Alternative A, this would reduce the risk of accidents by appropriately managing the roads and trails in the Monument based on the level of anticipated use.

Under Alternatives B, C, and D, management would prohibit recreational shooting in some areas of the Monument, unlike Alternative A. These include areas with higher visitation in the Monument. Under all action alternatives, the BLM would prohibit recreational shooting on the 2,804 acres of the Southern Doña Ana Mountains RMZ. Alternatives B and C would additionally prohibit recreational shooting across

additional portions of the Doña Ana Mountains SRMA (7,284 and 5,858 acres, respectively). Compared with Alternative A, this would reduce the potential for accidents and the need to clean up any lead waste from bullets. Prohibiting camping at the Sierra Vista and Baylor Canyon trailheads under Alternative B and limiting camping to two days under Alternative D would reduce public safety risks from trash, other waste, and conflicts with day users in those areas. These risks would similarly be reduced if implementation-level planning and designation of camping areas under Alternative C addressed the use at these areas.

Cumulative Impacts

Implementing a road fee at the Dripping Springs Natural Area would mitigate the number of people entering Dripping Springs, which would decrease user conflicts and the risk of safety due to fires in the area. Also, at the Sierra Vista Trailhead there would be improvements to the access road leading to the trailhead. This would allow safer public access to this area of the Monument. Finally, throughout the Monument, management would improve trailheads to meet the rising public-use demands. These projects are already slated for the next 5 years; when they are combined with the proposed management, they would improve public health and safety in the area by managing the increase in visitors and recreational use.

Chapter 4. Consultation and Coordination

4.1 INTRODUCTION

This chapter describes the public outreach and participation opportunities associated with developing this RMP/EIS. As part of the process, the BLM is consulting and coordinating with Tribes, government agencies, and other relevant parties. The BLM is in the process of developing memoranda of understanding with cooperating agencies.

The BLM conducts land use planning in accordance with NEPA requirements, CEQ regulations, and Department of the Interior and BLM policies and procedures for implementing NEPA. NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process. This is to develop a reasonable range of alternatives to the proposed actions and to prepare environmental documents that disclose the potential impacts of proposed actions and alternatives.

The BLM has involved and will continue to involve the public and other agencies by way of *Federal Register* notices, public and informal meetings, individual contacts, letters, emails, postcards, media releases, and the OMDPNM RMP/EIS ePlanning website.¹

4.2 CONSULTATION AND COORDINATION

Federal laws require the BLM to consult with certain federal and state agencies and entities and Native American Tribes (40 CFR 1502.25) during the NEPA decision-making process. The BLM is also directed to integrate NEPA requirements with other environmental review and consultation requirements to reduce paperwork and delays (40 CFR 1500.4-5). The BLM has implemented a collaborative outreach and public involvement process that has included public scoping and coordinating directly with Tribes and cooperating agencies. The BLM will continue to meet with interested agencies and organizations throughout the planning process, as appropriate, and continue coordinating closely with cooperating agencies and Tribes.

4.2.1 Tribal Relationships and Indian Trust Assets

The BLM has the responsibility to ensure that meaningful consultation and coordination concerning Tribal treaty rights and trust resources are conducted on a government-to-government basis with federally recognized Tribes. The BLM has legal obligations to identify, protect, and conserve the trust resources of federally recognized Tribes and Tribal members, and to consult with Tribes on a government-to-government basis whenever plans or actions affect Tribal trust resources, trust assets, or Tribal health and safety. BLM coordination or consultation with Native Americans, as it pertains to treaty rights and trust responsibility, is conducted in accordance with FLPMA; NEPA; the National Historic Preservation Act; BLM Handbook H-17880-1, *Improving and Sustaining BLM-Tribal Relations*; Executive Order 13084, *Consultation and Coordination with Indian Tribal Governments* (May 13, 1998); Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (May 6, 2000); and Secretarial Order 3403, *Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters* (November 15, 2021).

¹ <https://eplanning.blm.gov/eplanning-ui/project/92170/510>

For the OMDPNM RMP/EIS, consultation began in December 2021, when letters were sent to Tribal governments. These letters invited recipients to partner with the BLM as cooperating agencies and participate in the alternatives development workshop for cooperating agencies held in January 2022, as well as to initiate government-to-government consultation. While no Tribes have become official cooperating agencies, consultation will continue throughout the RMP/EIS development process.

The BLM will continue to reach out to area Tribes through a variety of formats. In addition to the letters initiating government-to-government consultation and extending an invitation to participate as a cooperating agency, the BLM intends to follow up on these letters with telephone calls.

The BLM has initiated government-to-government consultation with letters to the following 13 federally recognized Native American Tribes: Comanche Indian Tribe, Fort Sill Apache Tribe of Oklahoma, Hopi Tribe of Arizona, Kiowa Tribe of Oklahoma, Mescalero Apache Tribe, Navajo Nation, Pueblo of Acoma, Pueblo of Isleta, Pueblo of Laguna, Pueblo of Tesuque, Pueblo of Ysleta del Sur, Pueblo of Zuni, and the White Mountain Apache Tribe. To date, only the White Mountain Apache Tribe has responded, indicating they would not be participating in the RMP process.

Additionally, two non-federally recognized Indigenous communities reside near the Monument that may have historical and present connections with locations and resources in the Monument: the Piro-Manso-Tiwa Tribe and the Tortugas Pueblo. Both groups reside in the Las Cruces area and were invited by the BLM to participate in the alternatives development workshops. Representatives from both the Piro-Manso-Tiwa Tribe and the Tortugas Pueblo participated in one or more of the workshops.

4.2.2 Intergovernmental and Interagency

The BLM is the lead agency for the OMDPNM RMP/EIS. In December 2021, the LCDO sent 52 letters to local, state, federal, and Tribal representatives, inviting them to participate as cooperating agencies. Ten agencies have accepted cooperating status, including one tentative acceptance. An agency or Tribe has the option of signing on as a cooperator at any time during the RMP process.

Table 4-1 lists the entities that have been invited to participate as cooperating agencies in the OMDPNM RMP/EIS process. The status column indicates their response to the invitation, if one has been received. A status of “pending” means no response has been received to date.

**Table 4-1
Cooperating Agency Participation Status**

Potential Cooperator Contacted	Status
Bureau of Reclamation, Upper Colorado Basin Regional Office	Pending
City of Alamogordo	Pending
City of Anthony	Pending
City of Deming	Pending
City of El Paso	Pending
City of Las Cruces	Accepted
Comanche Indian Tribe	Pending
Deming Soil and Water Conservation District	Accepted
Department of the Defense	Pending
Department of the Interior	Pending
Doña Ana County	Accepted

Potential Cooperator Contacted	Status
Doña Ana County Office of the Flood Commission	Pending
Doña Ana Soil and Water Conservation District	Accepted
EPA, Region 6	Pending
Fort Sill Apache Tribe of Oklahoma	Pending
Franklin Mountains State Park	Pending
Gila National Forest	Pending
Headquarters, US Army Garrison, Fort Bliss	Pending
Holloman Air Force Base	Pending
Hopi Tribe of Arizona	Pending
International Boundary and Water Commission Upper Rio Grande Projects, Las Cruces Office	Pending
Kiowa Tribe of Oklahoma	Pending
New Mexico State Parks, Leasburg Dam State Park	Pending
Lincoln National Forest	Pending
Luna County	Pending
Mescalero Apache Tribe	Pending
New Mexico State Parks, Mesilla Valley Bosque State Park	Pending
Natural Resources Conservation Service New Mexico, South Area	Tentatively Accepted
Navajo Nation	Pending
New Mexico Department of Agriculture	Accepted
New Mexico Department of Game and Fish	Accepted
New Mexico Environment Office	Pending
New Mexico Office of the State Engineer	Pending
New Mexico State Land Office	Accepted
NPS, Intermountain Region Office	Pending
Pueblo of Acoma	Pending
Pueblo of Isleta	Pending
Pueblo of Laguna	Pending
Pueblo of Tesuque	Pending
Pueblo of Ysleta del Sur	Pending
Pueblo of Zuni	Pending
Texas Parks and Wildlife	Pending
US Army Corps of Engineers, Albuquerque District	Pending
US Army, White Sands Missile Range	Accepted
USFWS, San Andres National Wildlife Refuge	Pending
USFWS, Southwest Region Office	Pending
US Geological Survey	Pending
Village of Hatch	Pending
White Mountain Apache Tribe	Declined
White Sands National Park (NPS)	Accepted

The BLM is providing advance draft documents to cooperating agencies during the RMP/EIS process in addition to accepting cooperating agency feedback during the public scoping and Draft EIS public comment periods. The BLM also invited cooperators to the four alternatives development workshops held in January, February, and March of 2022. Representatives from many of these cooperators attended.

**Table 4-2
OMDPNM RMP/EIS Alternatives Development Workshops**

Meeting	Date
Workshop 1	January 26–27, 2022
Workshop 2	February 9–10, 2022
Workshop 3	February 22–24, 2022
Workshop 4	March 15–17, 2022

4.2.3 New Mexico State Historic Preservation Office Consultation

The Draft RMP/EIS was provided to the SHPO concurrently with its release to the public in support of Section 106 consultation under the National Historic Preservation Act. Additional information on SHPO consultation will be added to the Proposed RMP/Final EIS.

4.2.4 US Fish and Wildlife Service Consultation

To comply with Section 7(c) of the ESA, the BLM is consulting with the USFWS. The USFWS provided input on planning issues, data collection and review, and alternatives development. The BLM will consult with the USFWS to identify ESA issues and to develop the biological assessment, which will be prepared after public comments are received on the Draft RMP/EIS.

4.2.5 Governor’s Consistency Review

Before the Deciding Official approves the Proposed RMP, the governor of New Mexico will have 60 days to identify inconsistencies between the Proposed RMP and State plans and programs, and to provide written comments. If the governor does not respond within this period, it is assumed that the Proposed RMP decisions are consistent. If the governor recommends changes in the Proposed RMP that were not already raised in the public participation process, the Deciding Official will provide the public an opportunity to comment on the recommendations (43 CFR 1610.3-2). The public comment period will be offered for 30 days. If the Deciding Official does not accept the governor’s recommendations, the governor will have 30 days to appeal in writing to the BLM director.

4.3 PUBLIC COLLABORATION AND OUTREACH

Public involvement is a vital and legal component of both the RMP and EIS processes. Public involvement vests the public in the decision-making process and provides full environmental disclosure. Guidance for implementing public involvement under NEPA is codified in 40 CFR 1506.6, thereby ensuring federal agencies make a diligent effort to involve the public in the NEPA process.

In 2017, the BLM and the Public Land Recreation Research Partnership conducted surveys and held focus groups to better understand recreational outcomes and experiences on BLM-administered lands in and around the Monument. Three public meetings to discuss the management and use of public lands were held on October 26, 27, and 28, 2017, in Las Cruces and Anthony, New Mexico, and El Paso, Texas, respectively. These meetings and the subsequent reports provided the BLM with the public’s perceptions, opinions, preferences, and attitudes about management and use of public lands in Doña Ana County, with a focus on the Robledo, Las Uvas, Doña Ana, Potrillo, and Organ Mountains.

The public outreach and collaboration phases will be ongoing throughout the RMP/EIS process. The public can continue to obtain information on the RMP/EIS from the BLM’s ePlanning website.

4.3.1 Public Scoping

The public scoping period began with the publication of the Notice of Intent, titled “Notice of Intent To Prepare a Resource Management Plan for the Organ Mountains-Desert Peaks National Monument and an Associated Environmental Impact Statement, New Mexico” in the *Federal Register* on June 22, 2023 (88 *Federal Register* 40846). The BLM requested submission of public comments concerning the scope of analysis, potential alternatives, and identification of relevant information between June 22, 2023, and July 24, 2023.

ePlanning Website

The BLM maintains the project’s ePlanning website (<https://eplanning.blm.gov/eplanning-ui/project/92170/510>) with information related to the development of the OMDPNM RMP/EIS. The BLM included the ePlanning website location in the scoping press release; it also made available background documents, maps, project updates, and contact information during the scoping period. The ePlanning website will be updated as the BLM moves through the planning process.

Media Advertisements

The BLM advertised the public scoping period in newspapers across the planning area, including in some of the newspapers’ online editions. A complete list of media outlets where the BLM placed advertisements is included **Table 4-3**, below. The BLM also distributed public notices via the project’s ePlanning website and press releases.

Table 4-3
Scoping Media Announcements

Newspaper	Publication Date
<i>Deming Headlight</i>	Friday, July 7, 2023
<i>El Paso Times</i>	Friday, July 7, 2023
<i>Las Cruces Bulletin</i>	Friday, July 7, 2023
<i>Las Cruces Sun News</i>	Thursday, July 6 and Friday, July 7, 2023

Scoping Meetings

The BLM held five in-person and one virtual public scoping meeting at the locations listed in **Table 4-4**, below. The public scoping meetings included a PowerPoint presentation describing the BLM’s planning process, the purpose and need of the RMP/EIS, an overview of planning issues, and opportunities for public involvement. Materials presented and additional information were documented in the scoping report (BLM 2023d).

Table 4-4
Public Scoping Meetings

Meeting Format	Meeting Date	Meeting Time*	Number of Public Attendees
In person (Anthony, New Mexico)	July 10, 2023	6:00 p.m. to 8:00 p.m.	2
In person (Deming, New Mexico)	July 11, 2023	6:00 p.m. to 8:00 p.m.	1
In person (Las Cruces, New Mexico)	July 12, 2023	6:00 p.m. to 8:00 p.m.	81
In person (Hatch, New Mexico)	July 13, 2023	5:00 p.m. to 7:00 p.m.	5
In person (El Paso, Texas)	July 14, 2023	3:00 p.m. to 5:00 p.m.	2
Virtual (Zoom webinar)	July 17, 2023	6:00 p.m. to 8:00 p.m.	12

* All times are mountain daylight time.

4.3.2 Socioeconomic Workshops

The BLM hosted two socioeconomic workshops on Monday, July 17 and Tuesday, July 18, 2023, to provide an opportunity for state and local government officials, community leaders, and other relevant parties to discuss regional economic conditions, trends, and strategies. Participants were asked to provide any insight or recommendations that would help to formulate a more complete picture of socioeconomic conditions and interests in and around the Monument. The BLM identified a diverse list of interested parties based on geographic areas with BLM-administered lands and mineral estate and identified issues. The results of the workshops were used to help inform key issues driving the social and economic analysis and formalize the analysis approach for the RMP/EIS.

4.4 LIST OF PREPARERS

This Draft RMP/EIS was prepared by an interdisciplinary team of staff from the BLM and Environmental Management and Planning Solutions Inc. (EMPSi, now AECOM), with their supporting subcontractors, Ramboll, Synergy, and Statistical Research, Inc. (SRI). **Table 4-5** is a list of people that prepared or contributed to the development of the Draft RMP/EIS.

**Table 4-5
RMP/EIS Preparers**

Name	Role	Qualifications
BLM Management Team		
Patrick Rich, EMBA	Planning and Environmental Coordinator	—
Mara Weisenberger	Former Monument Manager; Technical Expert	Mara holds a bachelor's degree in psychology focusing on animal behavior and a master of science degree in wildlife ecology, both from the University of Arizona. She has over 30 years of experience working in the Department of the Interior for the USFWS and BLM.
Gordon Michaud	NEPA Coordinator; Soils; Air Quality	—
BLM Interdisciplinary Team		
Liz Plazewski	Vegetation, Weeds, Rare Plants	Liz holds an interdisciplinary bachelor of science degree in life science/arts with minors in biology, environmental science, and psychology from the University of Central Florida. They have over 4 years of experience working in botany and ecology in the Chihuahuan Desert.
Treaver Ashby	Lands and Realty; Renewable Energy	—
Jesarey Barela	Vegetation, Weeds, Rare Plants; Livestock Grazing	Jesarey holds bachelor of science degrees in range science, wildlife science, and fisheries, along with a minor in biology and conservation ecology from New Mexico State University. He has 18 years of federal government experience, including 6 years as a natural resource specialist with the BLM and 12 years of prior experience working as a rangeland management specialist with the Forest Service.

4. Consultation and Coordination (List of Preparers)

Name	Role	Qualifications
Mark Bernal	Wildland Fire Ecology and Management (Fire)	—
McKinney Briske	Wilderness	—
Molly Boyter	Botanist	—
Dominick Chavez	Public Safety and Hazmat	—
Ricky Cox	Wildland Fire Ecology and Management (Fuels)	—
Colin Dunn	Geology; Minerals; Paleontology; Cave and Karst	Colin holds a bachelor of science degree in geology from Michigan Technological University, a master of science degree in paleontology from South Dakota School of Mines, and a museum studies certificate from Black Hills State University. He has 7 years of experience in federal paleontological resources management.
Corey Durr	Water Resources	Corey holds a bachelor of science degree in geology and a master of science degree in geology with an emphasis on depositional environments from New Mexico State University. He has over 14 years of experience as a hydrologist with the BLM.
Edna Flores	Recreation; Transportation and Access; Visual; Wilderness	Edna holds a bachelor of science degree in environmental biology from the University of Texas at El Paso. She has 6 years of experience working with recreation, wilderness, travel and transportation, and visual resource management with the BLM and a total of 16 years of experience working in public lands management with the NPS and BLM.
Shannon Gentry	Range	—
Cody Howard	Wildlife Biologist	—
Garrett Leitermann	Tribal Interests; Cultural Resources	Garrett holds a bachelor of arts degree in history from St. Norbert College and a master of arts degree in anthropology/archaeology from New Mexico State University. He has 7 years of experience working in cultural resource management as an archaeologist in southern New Mexico for the BLM and private industry.
Hebin Lin, PhD	Social and Economic Conditions, Environmental Justice	Hebin holds a bachelor of arts degree in public administration, a master of arts degree in environmental policy, and a PhD in ecological economics. She has 14 years of experience in economic analysis, natural resource management, and ecosystem services governance working in Japan, the United Kingdom, and the US for universities, research institutes, nongovernmental organizations, state governments, and the federal government.

4. Consultation and Coordination (List of Preparers)

Name	Role	Qualifications
Paula Montez	Lands and Realty	Paula holds a bachelor of business administration degree in general business from New Mexico State University. She has over 14 years of experience in the lands and realty division of the BLM.
Andres Montoya	Facilities; Travel and Transportation	—
Ruben Rodriguez	GIS Lead	—
Keith Sauter	State Lead Hydrologist	—
“Rusty” Russell Stovall	Facilities; Travel and Transportation	—
Christopher Teske	Abandoned Mine Lands	—
Mike Williams	Facilities; Travel and Transportation	—
Environmental Management and Planning Solutions Inc. (EMPSi, now AECOM)		
Management Team and Key Personnel		
Katie Patterson, JD	Project Manager	Katie holds a bachelor of arts degree in environmental policy and a JD degree in environmental law from the University of Colorado Boulder. She has over 11 years of experience as a NEPA planner.
Amy Cordle	Assistant Project Manager; Air Quality and Climate Change Lead	Amy has a bachelor of science degree in civil engineering from Virginia Polytechnic Institute and State University. She has more than 25 years of experience as a technical specialist and project manager for resource management plans and other NEPA projects.
Sean Cottle	Wilderness Lead; Lands with Wilderness Characteristics	Sean has a bachelor of science degree in ecohydrology from the University of Nevada, Reno. He has more than 8 years of experience as a NEPA planner.
Zoe Ghali	Socioeconomics and Environmental Justice Lead	Zoe has a bachelor of science degree in biology from the University of California Santa Barbara, a master of science degree in environmental physiology, and a certificate in environmental policy from the University of Colorado Boulder. She has more than 12 years of experience as a NEPA planner leading socioeconomic analyses for BLM projects.
Karen Swope, PhD	Archaeologist; Principal Investigator	Karen holds a bachelor of arts in liberal studies from California State University San Bernardino, a master of science in anthropology from University of California Riverside, and a PhD in anthropology from University of California Riverside. They have 37 years of archaeological experience across the western states, including New Mexico.
Marcia Rickey, GISP	GIS/eGIS Specialist Lead	Marcia has a bachelor of science degree in biology from the University of Dayton and a master of science degree in biology from Illinois State University. She has more than 20 years of experience working as a GIS specialist.

Name	Role	Qualifications
Holly Prohaska	Quality Assurance/Quality Control; Alternatives Development	Holly has a bachelor of arts degree in marine science and biology from the University of San Diego and a master of science degree in environmental management from the University of San Francisco. She has more than 20 years of experience in managing large-scale resource management plans and NEPA projects.
<i>EMPSi (now AECOM) ID Team and Support Staff</i>		
Sean Cottle	Special Designations (ACECs, Wild and Scenic Rivers, National Trails, and Wilderness Characteristics)	Sean has a bachelor of science degree in ecohydrology from the University of Nevada, Reno. He has more than 8 years of experience as a NEPA planner.
Francis Craig	Energy and Minerals (Including Fluid, Solid, Locatable, and Salable Minerals)	Francis has a bachelor of science degree in geoscience and psychology with a minor degree in environmental studies from Hobart College and a master of science degree in environmental remote sensing and GIS from Boston University. He has more than 5 years of experience as a NEPA planner.
Kirsten Davis	Geological Resources; Soil Resources	Kirsti has a bachelor of science degree in environmental science with a geology emphasis from the University of Nevada, Reno. She has more than 3 years of experience as a NEPA planner.
Kevin Doyle	Cultural and Historic Resources; Paleontological Resources	Kevin has a bachelor of arts degree in sociology from the University of California, Santa Barbara. He has more than 35 years of overseeing cultural resources analyses for NEPA documents and Tribal engagement experience for projects on public and Tribal lands.
Derek Holmgren	Visual Resources; Recreation; Travel Management (Reviewer)	Derek has a master of public affairs degree in environmental policy and natural resources management and a master of science degree in environmental science from Indiana University. He has more than 20 years of experience as a NEPA planner.
Jenna Jonker	GIS/eGIS	Jenna has a bachelor of arts degree in geography from Calvin University with a minor in geology. She has more than 10 years of experience as a GIS specialist.
Taylor Bartlett	Public Health and Safety; Visual Resources	Taylor has a bachelor of arts in environmental science from the University of Colorado Boulder. She has over a year of experience as a NEPA planner.

4. Consultation and Coordination (List of Preparers)

Name	Role	Qualifications
Noelle Crowley	Lands and Realty; Renewable Energy	Noelle has a bachelor of science in environmental studies from the University of Southern California and a master of the environment from the University of Colorado Boulder. She has over 3 years of experience as a NEPA planner.
Luke Hodges	Wildlife Biologist; Special Status Species	Luke has a bachelor of science in biology from Radford University. He has over 13 years of wildlife and natural resource experience.
Meredith Linhoff	Vegetation; Wildlife Biologist; Special Status Species (Reviewer)	Meredith has a bachelor of science degree in biology and environmental science from SUNY Binghamton and a master of arts degree in biology from Boston University. She has more than 15 years of experience as a biologist and NEPA planner.
Erin Hudson, PhD	Tribal Interests, Caves and Karst (Reviewer)	Erin has a bachelor of arts in anthropology from the University of Colorado Boulder, a master of arts in anthropology from Georgia State University, a master of arts in anthropology from the University of New Mexico, and a PhD in anthropology from the University of New Mexico. She has over 15 years of experience in natural and cultural resource regulations, specializing in federal land management and resource planning.
Perry Lown	Cultural Resources; Tribal Interests; Paleontology	Perry has a bachelor of arts in anthropology from the University of New Mexico. He has over 8 years of experience as a resource specialist.
Clayton McGee	Recreation; Travel Management; Comment Analysis	Clayton has a bachelor of arts degree in environmental studies with a minor in political science from the University of Colorado Boulder. He has more than 2 years of experience as a NEPA planner.
Josh Schnabel	Public Health and Safety; Socioeconomics and Environmental Justice (Reviewer)	Josh has a bachelor of arts degree in sociology from the University of Northern Colorado and a master of science degree in natural resource management and environmental planning from San Francisco State University. He has more than 15 years of experience as a NEPA planner.
David Scott	Water Resources (Reviewer)	David has a bachelor of science in environmental science from Colorado College and is expected to graduate with a master of science in watershed science from Colorado State University. He has over 10 years of professional experience as an environmental planner, including 5 years in water resource management.

4. Consultation and Coordination (List of Preparers)

Name	Role	Qualifications
Andy Spellmeyer	Livestock Grazing (Reviewer)	Andy has a bachelor of science degree in biology and a master of science degree in biology from Wichita State University. He has more than 8 years of experience as a NEPA planner and resource specialist.
Theresa O'Halloran	Water Resources	Theresa has a bachelor of arts degree in geography from the University of Colorado Boulder, a bachelor of arts degree in sociology from the University of Colorado Boulder, and a master of science in hydrology from the University of Nevada, Reno. She has over 10 years of professional experience in water quality, water resources, and ecological monitoring.
Shannon Regan	Wildland Fire (Reviewer); Vegetation	Shannon has a bachelor of science degree in marine science from Coastal Carolina University and a master of science degree in fisheries, wildlife, and conservation biology from North Carolina State University. She has over 8 years of professional experience in biological resource management.
Shine Roshan	Air Quality and Climate Change	Shine has a bachelor of science degree in physics and a master of science degree in physics from San Francisco State University. She has over 4 years of experience as an environmental planner and resource specialist.
Liza Schill	Livestock Grazing; Wildland Fire	Liza has a bachelor of science in forestry from Colorado State University. She has over 2 years of experience as an environmental planner and resource specialist.
Megan Stone	Socioeconomics and Environmental Justice; Decision File Lead	Megan has a bachelor of arts in environmental studies from the University of Colorado Boulder. She has over 4 years of experience as a NEPA planner and resource specialist.
Alli Yamnitsky	Special Designations	Alli has a bachelor of science in physical geography from Western Oregon University. She has over 2 years of experience as an environmental planner and resource specialist.
Cindy Schad	Formatting	Cindy has a bachelor of fine arts in creative writing from Emerson College. She has over 20 years of experience as a word processor for environmental consulting firms.

Name	Role	Qualifications
Synergy ID Team		
Jack Alexander	Livestock Grazing (Reviewer)	Jack has a bachelor of science degree in range science from Texas A&M University and a master of science degree in range science from Montana State University. He has over 35 years of experience in rangeland inventory and management and over 30 years of monitoring design and project management.
Ramboll ID Team		
Ross Beardsley, PhD	Air Quality and Climate	Ross has a doctorate in environmental engineering sciences from the University of Florida. He has over 10 years of experience in atmospheric modeling and analysis. His NEPA expertise includes air quality, greenhouse gas, and climate change impact assessments for mineral development projects and resource management plans.
John Grant	Air Quality and Climate	John received his bachelor of science degree in environmental resources engineering from Humboldt State University. He has over 15 years of experience in emission inventory and controls modeling and analysis. He has over 10 years expertise related to air quality and greenhouse gas impact assessments under NEPA for resource management plans and mineral development projects.
Krish Vijayaraghavan	Air Quality and Climate	Krish has a master of science degree in environmental engineering from the Georgia Institute of Technology and a master of science degree in chemical engineering from the University of Kansas. He has over 25 years of experience in air quality modeling and analysis, with an expertise in air resource and greenhouse gas/climate change analyses for NEPA documents.

4.5 DISTRIBUTION AND AVAILABILITY OF THE DRAFT RMP/EIS

A notice of availability announcing the release of the Draft RMP/EIS was published in the *Federal Register* to begin the 90-day public comment period. All documents are available for download via the OMDPNM RMP/EIS website (<https://eplanning.blm.gov/eplanning-ui/project/92170/510>). All contacts on the mailing list at the time of the notice of availability, including cooperating agencies and Tribal representatives, received an email or postcard notification, or both, announcing the Draft RMP/EIS availability.

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Glossary

Acquisition—Acquisition of lands pursued to facilitate various resource management objectives. Acquisitions, including easements, can be completed through exchange, purchase, or donation.

Air pollution—The addition of any material to the atmosphere that may have a deleterious effect on life on earth.

Air quality—A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

Air quality maintenance area—A geographic area that had a history of nonattainment but is now consistently meeting the National Ambient Air Quality Standards. Maintenance areas have been redesignated by the EPA from “nonattainment” to “attainment with a maintenance plan,” or designated by the Environmental Quality Commission.

Air quality-related values—Resources such as visibility, water, soils, flora, fauna, cultural resources, or odor that have the potential to be changed by air pollution.

Air quality standard—Level of air pollutants prescribed by regulations that may not be exceeded during a specified time in a defined area.

Allotment—An area of land designated and managed for livestock grazing. Allotments generally consist of BLM-administered lands but may include other federally managed, state-owned, and private lands, as well as Tribal lands. An allotment may include one or more separate pastures. Livestock numbers and periods of use are specified for each allotment.

Ambient (air)—The surrounding atmospheric conditions to which the general public has access.

Ambient air quality—The state of the atmosphere at ground level as defined by the range of measured or predicted ambient concentrations of all significant pollutants for all averaging periods of interest.

Animal unit month (AUM)—The amount of forage necessary for the sustenance of one cow or its equivalent for a period of 1 month.

Aquatic—Living or growing in or on the water.

Archaeology—The scientific study of human activity through the recovery and analysis of material culture.

Area of critical environmental concern (ACEC)—An area 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 (43 CFR 1601.0-5(a)). The BLM evaluates and designates ACECs as part of the land use planning process

Arroyo—A dry creek, stream bed, or gulch that temporarily or seasonally fills and flows after sufficient rain.

Attainment area—An area that meets a federal primary or secondary ambient air quality standard for a specified pollutant.

Avoidance/avoidance area—An area identified through resource management planning to be avoided, but it may be available for right-of-way location with special stipulations.

Baseline—The preexisting condition of a defined area or resource that can be quantified by appropriate metrics. During environmental reviews, the baseline is considered the affected environment that exists at the time of the review's initiation. The baseline is used to compare predictions of the effects of the proposed action or a reasonable range of alternatives.

Basin-fill—Sediments that fill a basin. A basin is any of the following: a depressed area having no surface outlet (topographic basin); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (water); a depression in the earth's surface with the lowest part often filled by a lake or pond (lake basin); or a widened part of a river or canal (drainage, river, or stream basin).

Best management practices—A suite of techniques that guide or may be applied to management actions to aid in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a planning decision unless the plans specify that they are mandatory.

Big game—Indigenous, ungulate (hoofed) wildlife species that are hunted, such as elk, deer, bison, bighorn sheep, and pronghorn antelope.

Biodiversity (biological diversity)—The variety of life and its processes, and the interrelationships within and among various levels of ecological organization. Conservation, protection, and restoration of biological species and genetic diversity are needed to sustain the health of existing biological systems. Federal resource management agencies must examine the implications of management actions and development decisions on regional and local biodiversity.

Biological soil crust—A complex association between soil particles and cyanobacteria, algae, microfungi, lichens, and bryophytes that live within or atop the uppermost millimeters of soil.

BLM sensitive species—Those species that are not federally listed as endangered, threatened, or proposed under the Endangered Species Act, but that are designated by the BLM State Director under 16 USC 1536(a)(2) for special management consideration. By national policy, federally listed candidate species are automatically included as sensitive species. Sensitive species are managed so they will not need to be listed as proposed, threatened, or endangered under the Endangered Species Act.

Canid—A mammal of the dog family (Canidae).

Carbon dioxide—A colorless, odorless gas produced by burning carbon and organic compounds and by respiration. It is naturally present in air (about 0.03 percent) and is absorbed by plants in photosynthesis.

Carbon dioxide is removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle.

Carbon monoxide—A colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels, including gasoline, oil, and wood. Carbon monoxide is also produced from incomplete combustion of many natural and synthetic products.

Cinder cone—A conical hill formed by the accumulation of cinders and other pyroclasts, normally of basaltic or andesitic composition. Steepness of the slopes depends on the coarseness of the ejecta, height of eruption, wind velocity, and other factors; however, steepness is normally greater than 10 degrees.

Class I area (for air quality)—Certain wilderness areas greater than 5,000 acres, national memorial parks greater than 5,000 acres, national parks greater than 6,000 acres, and international parks that were in existence on or before August 7, 1977.

Class II area (for air quality)—By default, all areas not designated as Class I areas.

Class II wilderness area (for air quality)—Areas deserving of preservation, including wilderness areas established by the Wilderness Act.

Clay—A term used to categorize small soil particles (smaller than 0.002 millimeters in size).

Clean Air Act—Federal legislation governing air pollution. The Clean Air Act established National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, and lead. Prevention of significant deterioration classifications define the allowable increased levels of air quality deterioration above legally established levels. They include the following:

- Class I: Minimal additional deterioration in air quality (certain national parks and wilderness areas)
- Class II: Moderate additional deterioration in air quality (most lands)
- Class III: Greater deterioration for planned maximum growth (industrial areas)

Climate change—Any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from the following:

- Natural factors, such as changes in the sun’s intensity or slow changes in the Earth’s orbit around the sun
- Natural processes within the climate system (for example, changes in ocean circulation)
- Human activities that change the atmosphere’s composition (for example, driving motor vehicles) and the land surface (for example, deforestation, reforestation, urbanization, and desertification)

Closed basin—An internally draining watersheds that does not drain into a lake or ocean.

Cooperating agency—Assists the lead federal agency in developing an EA or EIS. A cooperating agency may be any agency that has special jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.68; 43 CFR 1601.0-5(d)). Any federal, state, Tribal, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency. Cooperating agencies must enter into a written agreement with the BLM establishing cooperating agency status in the

planning and NEPA processes and participate in the various steps of the BLM's planning process as feasible given the constraints of their resources and expertise (43 CFR 1601.0-5(e)).

Criteria air pollutant—The Clean Air Act required the EPA to set National Ambient Air Quality Standards for pollutants known to be hazardous to human health and the public welfare. Six pollutants were identified: ozone, carbon monoxide, particulate matter (defined as having diameters less than or equal to 10 microns or to 2.5 microns), sulfur dioxide, lead, and nitrogen oxides. The term “criteria pollutant” derives from the requirement that the EPA must describe the characteristics and the potential health and welfare effects of these pollutants. It is on the basis of such criteria that the National Ambient Air Quality Standards are set or revised.

Cultural resource survey/inventory—Gathering of baseline information, including quantitative data, cultural knowledge, and qualitative observations about cultural resources.

Cultural resource—A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence.

Cumulative effects—The direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action.

Decision area—The decision area includes only those BLM-administered lands within a planning area for which the BLM has authority to make land use management decisions. In general, the BLM has jurisdiction over all BLM-administered lands (surface and subsurface) and over the subsurface minerals in areas of split estate (areas where the BLM administers federal subsurface minerals, but the surface is owned by someone other than the BLM).

Deciview—A unit of visibility proportional to the logarithm of the atmospheric extinction; a measure of how hazy the atmosphere is over a period; the smaller the number, the clearer the air.

Designated routes—Specific roads and trails identified by the BLM where some type of use is appropriate and allowed. Route designations are implementation decisions that govern only OHV activities on routes. The BLM designates routes as open, limited, or closed for OHV travel (BLM 2021).

Direct impact—Caused by an action or implementation of an alternative; a direct impact takes place at the same time and place.

Dispersed camping—Vehicle-accessed and supported camping occurring outside developed campgrounds (BLM 2021).

Dispersed recreation—Recreation activities of an unstructured type, which are not confined to specific locations such as recreation sites. Example of these activities may be hunting, fishing, off-road vehicle use, hiking, and sightseeing (BLM 2021).

Disposal lands—Transfer of public land out of federal ownership to another party through sale, exchange, or other land law statutes.

Diversity—The relative abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

Easement—A right afforded a person or agency to make limited use of another’s real property for access or other purposes.

Ecological site descriptions—Reports that provide detailed information about a particular kind of land—a distinctive ecological site.

Ecological sites—Provide a consistent framework for classifying and describing rangeland and forestland soils and vegetation, thereby delineating land units that share similar capabilities to respond to management activities or disturbance.

Endangered species—Any species that is in danger of extinction throughout all or a significant portion of its range (BLM 2008a). Under the Endangered Species Act in the US, endangered is the more protected of two categories; the other is “threatened.” Designation as endangered or threatened is determined by the USFWS as directed by the Endangered Species Act.

Endangered Species Act of 1973 (as amended)—Designed to protect critically imperiled species from extinction as a consequence of economic growth and development untempered by adequate concern and conservation. The act is administered by the USFWS and the National Oceanic and Atmospheric Administration. Its purpose is to protect species and the ecosystems that they depend on (16 USC 1531–1544).

Environmental Justice (EJ)—The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Ecosystem—A spatially explicit, relatively homogeneous unit of the earth that includes all interacting organisms and elements of the abiotic environment (the nonliving chemical and physical parts of the environment) within its boundaries.

Escaped fire—Any fire that began as a prescribed burn or campfire, but got out of control.

Exchange—A transaction whereby the federal government receives land or interests in land in exchange for other land or interests in land.

Exclusion area—An area identified through resource management planning that is not available for right-of-way location under any conditions.

Federal Land Policy and Management Act of 1976 (FLPMA)—Public Law 94-579, October 21, 1976, often referred to as the BLM’s Organic Act, which provides most of its legislated authority, direction policy, and basic management guidance.

Federal mineral estate—Subsurface mineral estate owned by the United States and administered by the BLM. It is the mineral estate underlying BLM-administered land, privately owned lands, and state-owned lands.

Fire frequency—A general term referring to the recurrence of fire in a given area over time.

Fire regime—A general term referring to the recurrence of fire in a given area over time.

Fire suppression—All work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Fluid minerals—Oil, gas, coal bed natural gas, and geothermal resources.

Forage— All browse and herbaceous foods that are available to grazing animals.

Fossil—The remains or impression of a prehistoric organism preserved in petrified form or as a mold or cast in rock.

Fugitive dust—Airborne particles emitted from any source other than through a stack or vent.

Goal—A broad statement of a desired outcome addressing resource and resource use characteristics within a planning area, or a portion of the planning area, toward which management of resources is directed.

Grant—Any authorization or instrument (for example, easement, lease, license, or permit) that the BLM issues under Title V of the Federal Land Policy and Management Act (43 USC 1761 et. seq.) and those authorizations and instruments that the BLM and its predecessors issued for like purposes before October 21, 1976, under the existing statutory authority. It does not include authorizations issued under the Mineral Leasing Act (43 USC 185). A grant can be either a ROW issued under Title V of FLPMA or under a permit. Under 43 CFR 2600, several types of grants are described concerning conveyance of title to qualifying entities, such as states, Tribes, the Federal Aviation Administration, etc.

Greenhouse gas (GHG)—A gas in an atmosphere that absorbs and emits radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect. The primary greenhouse gases in the earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

Ground-Disturbing Activities—An action that alters the vegetation, surface and near-surface soil resources, or surface geologic features beyond natural site conditions and on a scale that affects other public land values. Examples of surface-disturbing activities are the operation of heavy equipment to construct roads or other features; installation of pipelines and power lines in rights-of-way; and conducting several types of vegetation treatments (for example, prescribed fire). Surface-disturbing activities may be either authorized or prohibited.

Groundwater—Water held underground in soil or permeable rock, often feeding springs and wells.

Habitat—An environment that meets a specific set of physical, biological, temporal, or spatial characteristics that satisfy the requirements of a plant or animal species or group of species for part or all of their life cycle.

Hazardous air pollutant—Pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

Hazardous material—A substance, pollutant, or contaminant that, due to its quantity, concentration, or physical or chemical characteristics, poses a potential hazard to human health and safety or to the environment if released into the workplace or the environment.

Historic—From a past time or culture.

Igneous rock—A rock or mineral that solidified from molten or partly molten material (that is, from a magma); also, applied to processes leading to, related to, or resulting from the formation of such rocks. Igneous rocks constitute one of the three main classes into which rocks are divided; the others are metamorphic and sedimentary. Intrusive (plutonic) igneous rocks cooled slowly in the subsurface, allowing large crystals to form; extrusive (volcanic) igneous rocks cooled at or near the surface, and subsequently have a fine-grained structure. Examples include granite, rhyolite, diorite, andesite, gabbro, and basalt.

Impact—The effect, influence, alteration, or imprint caused by an action.

Indicator—A measure or measurement of aspect of sustainability. A quantitative or qualitative variable that can be measured or described and, when observed, shows trends. Quantifiable performance measures of outcomes or objectives for attaining criteria designed to assess progress toward desired conditions.

Indirect impact—Results from implementing an action or alternative, but it usually occurs later in time or is removed in distance and is reasonably certain to occur.

Invasive plants—Plants that are not part of (if exotic) or are a minor component (if native) of the original plant community or communities that can become a dominant or codominant species on the site if management interventions do not actively control their future establishment and growth, or they are classified as exotic or noxious plants under state or federal law. Species that become dominant for only one to several years (for example, short-term response to drought or wildfire) are not invasive plants (BLM Handbook H-1740-2, Integrated Vegetation Management).

Invertebrate—A paraphyletic group of animals that neither possess nor develops a vertebral column (spine), including arthropods, mollusks, annelids, echinoderms, and cnidarians.

Karst—A type of landscape where the dissolving of the bedrock has created sinkholes, sinking streams, caves, springs, and other characteristic features. Karst is associated with soluble rock types such as limestone, marble, and gypsum.

Land tenure adjustments—Landownership or jurisdictional changes. To improve the manageability of BLM-administered lands and their usefulness to the public, the BLM has numerous authorities for repositioning lands into a more consolidated pattern, disposing of lands, and entering into cooperative management agreements. These land pattern improvements are completed primarily through the use of land exchanges but also through land sales, jurisdictional transfers to other agencies, and the use of cooperative management agreements and leases.

Leasable minerals—Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. These include energy-related mineral resources, such as oil, natural gas, coal, and geothermal, and some nonenergy minerals, such as phosphate, sodium, potassium, and sulfur. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

Lease stipulation—A modification of the terms and conditions on a standard lease form at the time of the lease sale.

Lease—The right to use, occupy, and develop public lands. Section 302 of the Federal Land Policy and Management Act of 1976 provides the BLM with the authority to issue leases for the use, occupancy, and development of public lands. The BLM issues leases for such purposes as commercial filming, advertising displays, commercial or noncommercial croplands, apiaries, livestock holding or feeding areas not related to grazing permits and leases, native or introduced species harvesting, temporary or permanent facilities for commercial purposes (does not include mining claims), residential occupancy, ski resorts, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy (if the residential structures are not incidental to the mining operation), and water pipelines and well pumps related to irrigation and nonirrigated facilities. The regulations establishing procedures for processing these leases and permits are found in 43 CFR 2920.

Lessee—For the purposes of this RMP, a lessee generally refers to a person or company permitted to graze livestock on public land.

Locatable minerals—Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

Lithified—Sediments that are solidified into rock.

Maar—A low-relief, broad volcanic crater formed by multiple shallow explosive eruptions. It is surrounded by a crater ring (a low-relief rim of fragmental material surrounding), and may be filled by water.

Management decision—A decision made by the BLM to manage public lands. Management decisions include both land use plan decisions and implementation decisions.

Mechanized travel—Travel by use of a machine, either motorized or nonmotorized (BLM 2021).

Methane—Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock, other agricultural practices, and land use and by the decay of organic waste in municipal solid waste landfills.

Mineral—Any naturally formed inorganic material, any solid or fluid inorganic substance that can be extracted from the earth, any of various naturally occurring homogeneous substances (such as stone, coal, salt, sulfur, sand, petroleum, water, or natural gas) obtained usually from the ground. Under federal laws, minerals are considered as locatable (subject to the general mining laws), leasable (subject to the Mineral Leasing Act of 1920), or mineral materials (that is, salable; subject to the Materials Act of 1947).

Mineral entry—The filing of a claim on public land to obtain the right to any locatable minerals it may contain.

Mineral estate—The ownership of minerals, including rights necessary for access, exploration, development, mining, ore dressing, and transportation operations.

Mineral materials—Common varieties of mineral materials, such as soil, sand and gravel, stone, pumice, pumicite, and clay, that are not obtainable under the mining or leasing laws but that can be acquired under the Materials Act of 1947, as amended.

Mitigation—Specific means, measures, or practices that could reduce, avoid, or eliminate adverse impacts. Mitigation can include avoiding the impact altogether by not taking a certain action or parts of an action; minimizing the impact by limiting the degree of magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

Modification—A change to the provisions of a lease stipulation, either temporarily or for the term of the lease. Depending on the specific modification, the stipulation may apply to all sites within the leasehold to which the restrictive criteria are applied.

Monitoring (plan monitoring)—The process of tracking the implementation of land use plan decisions and collecting and assessing data necessary to evaluate the effectiveness of land use planning decisions.

Motorized vehicles or uses—Vehicles that are motorized, such as jeeps, all-terrain vehicles (for example, four-wheelers and three-wheelers), trail motorcycles or dirt bikes, and aircraft.

National Ambient Air Quality Standards (NAAQS)—The allowable concentrations of air pollutants in the air specified by the federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

National Environmental Policy Act of 1969 (NEPA)—Public Law 91-190. Establishes environmental policy for the nation. Among other items, NEPA requires federal agencies to consider environmental values in decision-making processes.

National Historic Preservation Act of 1966 (NHPA)—Public Law 89-665. Establishes a national preservation program and a system of procedural protections, which encourage both the identification and protection of historic resources, including archeological resources, at the federal level and indirectly at the state and local level.

National Historic Trail (NHT)—A congressionally designated trail that is an extended, long-distance trail, not necessarily managed as continuous, that follows as closely as possible and practicable the original trails or routes of travel of national historic significance. The purpose of a NHT is the identification and protection of the historic route and the historic remnants and artifacts for public use and enjoyment. A NHT is managed in a manner to protect the nationally significant resources, qualities, values, and associated settings of the areas that such trails may pass through, including the primary use or uses of the trail (BLM 2012).⁷

National Register of Historic Places (NRHP)—A listing of architectural, historic, archaeological, and cultural sites of local, state, or national significance, established by the National Historic Preservation Act of 1966 and maintained by the National Park Service.

Native vegetation—Plant species that were found in an area prior to Euro-American settlement. They consequently are in balance with these ecosystems because they have well-developed parasites, predators, and pollinators.

Natural processes—Fire, drought, insect and disease outbreaks, flooding, and other events that existed prior to Euro-American settlement and that shaped the vegetation composition and structure.

Nitrogen oxides—Produced from burning fuels, including gasoline and coal. Nitrogen oxides are smog formers, which react with volatile organic compounds to form smog. Nitrogen oxides are also major components of acid rain.

Nitrous oxide—Emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; and wastewater treatment.

No surface occupancy (NSO)—A major constraint where use or occupancy of the land surface for fluid mineral exploration or development and all activities associated with fluid mineral leasing (for example, truck-mounted drilling and geophysical exploration equipment off designated routes, and construction of wells and pads) are prohibited to protect identified resource values. Areas identified as NSO are open to fluid mineral leasing, but surface occupancy or surface-disturbing activities associated with fluid mineral leasing cannot be conducted on the surface of the land. Access to fluid mineral deposits would require horizontal drilling from outside the boundaries of the NSO area.

Nonattainment area—An area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) any of the federal primary or secondary ambient air quality standards for the pollutant.

Noxious weed—A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common to the US (BLM Handbook H-1740-2, Integrated Vegetation Management).

Objective—A description of a desired outcome for a resource. Objectives can be quantified and measured and, where feasible, have established time frames for achievement.

Occupancy—Full-time or part-time residence on public lands. It also means activities that involve residence; the construction, presence, or maintenance of temporary or permanent structures that may be used for such purposes; or the use of a watchman or caretaker to monitor activities. Residences or structures include barriers to access, fences, tents, motor homes, trailers, cabins, houses, buildings, and storage of equipment or supplies (43 CFR 3715.0-5).

Off-highway vehicle (OHV)—Any motorized vehicle capable of, or designated for travel on or immediately over land, water, or other natural terrain, excluding (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) any vehicle in official use; and (5) any combat or combat support vehicle when used for national defense (BLM 2021).

Off-highway vehicle (OHV) area designations—Lands designated as open, limited, or closed for OHV use (BLM 2021):

- **Open:** Designated areas where all types of motorized vehicles (jeeps, all-terrain vehicles, motorized dirt bikes, etc.) are permitted at all times, anywhere in the area, on roads or cross country, subject to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342.
- **Limited:** Designated areas where motorized vehicles are restricted to designated routes. Off-road, cross-country travel is prohibited in limited areas, unless an area is specifically identified as an area where cross-country, over-snow travel is allowed. Some existing routes may be closed in limited areas.
- **Closed:** Designated areas where off-road motorized vehicle travel is prohibited year-round. Emergency use of vehicles is allowed year-round.

Off-highway vehicle (OHV) route designations—Management designations applied to individual routes (as opposed to OHV areas) during interdisciplinary route evaluation sessions. The BLM designates routes as open, limited, or closed, and the designation must be included in all route-specific decisions and recorded in the national ground transportation linear feature data set(s). Definitions and the designation criteria used in this decision-making process stem from those provided for OHV areas in 43 CFR 8340.0-5(f), (g), and (h) (BLM 2021).

- **OHV open:** OHV travel is permitted where there are no special restrictions or no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting the timing or season of use, the type of OHV, or the type of OHV user.
- **OHV limited:** OHV travel on routes, roads, trails, or other vehicle ways is subject to restrictions to meet specific resource management objectives. Examples of restrictions include numbers or types of vehicles; time or season of use; permitted or licensed use only; or other restrictions necessary to meet resource management objectives, including certain competitive or intensive uses that have special limitations.
- **OHV closed:** OHV travel is prohibited on the route. Access by means other than OHVs, such as by motorized vehicles that fall outside the definition of an OHV or by mechanized or nonmechanized means, is permitted. The BLM designates routes as closed to OHVs if necessary to protect resources, promote visitor safety, reduce use conflicts, or meet a specific resource goal or objective.

Opportunistic native species—Native plants that are adapted to disturbance or become excessively abundant as an unintended consequence of resource uses or other human actions. There is not a widely agreed term for this category; they are sometimes called “native invasives” (for example, in Interpreting Indicators of Rangeland Health). This usage is confusing, since natives cannot be invasive under the definitions used in Executive Orders 13112 and 13751.

Ozone—A gas that is a variety of oxygen. The oxygen gas found in the air consists of two oxygen atoms stuck together; this is molecular oxygen. Ozone consists of three oxygen atoms stuck together into an ozone molecule. Ozone occurs in nature; it produces the sharp smell near a lightning strike. High concentrations of ozone gas are found in a layer of the atmosphere—the stratosphere—high above the earth. Stratospheric ozone shields the earth against harmful rays from the sun, particularly ultraviolet B.

Smog's main component is ozone; this ground-level ozone is a product of reactions among chemicals produced by burning coal, gasoline, and other fuels, and chemicals found in products, including solvents, paints, and hairsprays.

Paleontological resources—Any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth.

Particulate matter—Includes dust, soot, and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including burning of diesel fuels by trucks and buses; incineration of garbage; mixing and application of fertilizers and pesticides; road construction; industrial processes, such as steel making, mining operations, agricultural burning (field and slash burning); and operation of fireplaces and woodstoves.

Perennial stream—One that flows continuously. Perennial streams are generally associated with a water table in the localities that they flow through.

Permitted use—For the purposes of this RMP, a permitted use generally refers to the forage allocated by, or under the guidance of, an applicable land use plan for livestock grazing in an allotment under a permit or lease and expressed in animal unit months (43 CFR 4100.0-5). Other types of permits/permitted activities include realty minimum impact permits (such as for film or apiaries), temporary use permits (for example, ROW construction), Federal Energy Regulatory Commission-issued and other hydroelectric permits, state-issued water right permits, special recreation/recreation use permits, mineral prospecting, mineral use (such as phosphate and sodium), geophysical exploration, vegetation sales (firewood, Christmas trees, boughs, greenery, mushrooms, etc.), cultural resource permits, paleontological permits, fire prevention activity, state-issued air quality permits, concessionaire permits, etc.

Permittee—A person or company permitted to graze livestock on public land, although the correct term is lessee.

Planning area—The geographic area within which the BLM will make decisions during the planning process. A planning area boundary includes all lands regardless of jurisdiction; however, the BLM does not make decisions for non-BLM-administered lands in the planning area (see *decision area*).

Policy—This is a statement of guiding principles or procedures designed and intended to influence planning decisions, operating actions, or other BLM affairs. Policies are established interpretations of legislation, executive orders, regulations, or other presidential, secretarial, or management directives.

Precontact—Relating to the period before contact of an Indigenous people with an outside culture.

Prescribed fire—A wildfire originating from a planned ignition to meet specific objectives identified in a written, approved, prescribed fire plan for which NEPA requirements (where applicable) have been met before ignition.

Prehistoric—Relating to the period of time before written records.

Pyroclastic rock—Pertaining to clastic rock material formed by a volcanic explosion or aerial expulsion from a volcanic vent; also, pertaining to rock texture of explosive origin. It is not synonymous with the adjective “volcanic.”

Quartz monzonite—Intrusive igneous rock that contains plagioclase feldspar, orthoclase feldspar, and quartz minerals.

Range improvement—An authorized physical modification or treatment that is designed to improve the production of forage, change the vegetation composition, control patterns of use, provide water, and stabilize soil and water conditions to restore, protect, and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means (43 CFR 4100.0-5).

Recreation opportunities—Favorable circumstances enabling visitors’ engagement in a leisure activity to realize immediate psychological experiences and to attain more lasting, value-added beneficial outcomes.

Reference state—In North America, the plant community that existed at the time of European immigration and settlement. Reference state is the plant community that was best adapted to the unique combination of environmental factors associated with the site. This community was in dynamic equilibrium with its environment. It is the plant community that was able to avoid displacement by the suite of disturbances and disturbance patterns that naturally occurred within the area occupied by the site. Natural disturbances, such as drought, fire, grazing of native fauna, and animal and insect impacts, were inherent in the development and maintenance of these plant communities.

Renewable energy—Energy resources that constantly renew themselves or that are regarded as practically inexhaustible. These include solar, wind, geothermal, hydropower, and biomass. Although particular geothermal formations can be depleted, the natural heat in the earth is a virtually inexhaustible reserve of potential energy.

Resource management plan (RMP)—A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA of 1976, as amended (Public Law 94-579, 90 Stat. 2743); a document containing an assimilation of planning decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. Synonyms include land use plans and management framework plans.

Restore/restoration—Implementation of passive or active management actions designed to increase or maintain perennial herbaceous species and landscape cover of sagebrush so that plant communities are more resilient to disturbance and invasive species over the long term. The long-term goal is to create functional, high-quality habitat that is occupied by sage-grouse. A short-term goal may be to restore the landform, soils, and hydrology and to increase the percentage of preferred vegetation, seeding of desired species, or treatment of undesired species.

Restriction/restricted use—A limitation or constraint on public land uses and operations. Restrictions can be of any kind, but they most commonly apply to certain types of vehicle use, temporal or spatial constraints, or certain authorizations.

Rhyolite rock—A group of fine-grained igneous rocks, typically porphyritic and commonly exhibiting flow texture (flow banded rhyolite versus non-flow-banded rhyolite), with phenocrysts of quartz and alkali feldspar in a glassy to cryptocrystalline groundmass. The extrusive equivalent of granite.

Right-of-way (ROW)—Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, pursuant to a ROW authorization. Examples are roads, pipelines, power lines, and fiber-optic lines.

Right-of-way avoidance area—An area identified through resource management planning to be avoided, but it may be available for ROW location with special stipulations.

Right-of-way exclusion area—An area identified through resource management planning that is not available for ROW location under any conditions.

Riparian area—A form of wetland transition between permanently saturated wetlands and upland areas. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, next to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

Road—A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Routes—Roads, trails, and primitive roads. Generically, components of the transportation system are described as “routes” (BLM 2021).

Sale (public land)—A method of land disposal pursuant to Section 203 of the Federal Land Policy and Management Act, whereby the United States receives a fair-market payment for the transfer of land from federal ownership. Public lands determined suitable for sale are offered on the BLM’s initiative. The lands must be identified in the RMP. Any lands to be disposed of by sale that are not identified in the current RMP, or that meet the disposal criteria identified in the RMP, require a plan amendment before a sale can occur.

Sand—A term used to categorize large soil particles (0.05 to 2.0 millimeters in diameter).

Scoping process—An early and open public participation process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

Sensitive soils—Sensitive soils have a high risk of degradation from surface uses, such as the soils poorly suited to reclamation, badlands, soils with severe erosion hazard, soils on steep slopes, and hydric soils. Criteria used to determine soil sensitivity to surface uses are continually adapted as conditions change or as new information or technology becomes available.

Shrink-swell potential—A property of clays determined by the dominant mineral composition. Clays with a high shrink-swell potential shrink when they are dry and expand (swell) when they are wet.

Silt—A term used to categorize soil particles larger than clay and smaller than sand (0.002 to 0.05 millimeters in diameter).

Special recreation management area (SRMA)—A public lands unit identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific, structured recreation opportunities. Both land use plan decisions and subsequent implementing actions for recreation in each SRMA are geared to a strategically identified primary market—destination, community, or undeveloped (BLM 2021).

Special recreation permit (SRP)—An authorization that allows specified recreational uses of the public lands and related waters. Special recreation permits are issued as a means to manage visitor use and to protect natural and cultural resources. They are also used as a mechanism to authorize commercial, competitive, and vending use; organized group use and events; and individual or group use of special areas.

Special status species—Species listed or proposed for listing under the ESA, and species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA.

Stabilize—The process of stopping further damage from occurring.

Standard—A description of the physical and biological conditions or degree of function required for healthy, sustainable lands (for example, land health standards). To be expressed as a desired outcome (goal).

Steep slopes—Those that are 30 percent or greater.

Stratigraphic—Relating to stratigraphy, a branch of geology concerned with the study of rock layers (strata) and layering (stratification).

Sulfur dioxide—A gas produced by burning coal, most notably in power plants. Some industrial processes, such as production of paper and smelting of metals, produce sulfur dioxide. Sulfur dioxide is closely related to sulfuric acid, a strong acid. Sulfur dioxide plays an important role in the production of acid rain.

Surface disturbance—Surface-disturbing activities result from land uses and affect soils and vegetation to varying degrees depending on the amount, location, and type of disturbance; soil type; time of year; climate; and surface hydrology. Surface-disturbing activities remove the protective vegetation cover and soil crusts. Surface-disturbing activities can alter the soil's physical, chemical, and biological properties, which increases the soil's susceptibility to water and wind erosion and decreases its quality and site productivity.

Terrestrial—Living or growing in or on the land.

Timber—Standing trees, downed trees, or logs that are capable of being measured in board feet.

Trace fossil—A fossil of a footprint, trail, burrow, or other trace of an animal rather than of the animal itself.

Traditional cultural property—A phrase commonly used in reference to a property of traditional religious and cultural importance, as defined in the National Historic Preservation Act.

Trail—A linear route managed for human power (for example, hiking or bicycling), stock (for example, horseback riding), or OHV forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Transition—A shift between two states. Transitions are not reversible by simply altering the intensity or direction of factors that produced the change. Instead, they require new inputs, such as revegetation or shrub removal. Practices such as these that accelerate succession are often expensive to apply.

Transmission—The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points where it is transformed for delivery to consumers or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

Tribal interests—Native American or Alaska Native economic rights, such as Indian trust assets, resource uses, access guaranteed by treaty rights, and subsistence uses.

Travel network—Routes occurring on public lands or within easements granted to the BLM that are recognized, designated, decided upon, or otherwise authorized for use through the planning process or other travel management decisions. These may be part of the transportation system and may be administered by the BLM (BLM 2021).

Tuff—A pyroclastic igneous rock composed of volcanic ash and fragmented pumice, formed when accumulations of the debris cement together. An air-fall tuff is formed when ash settles gently from the air, whereas a welded tuff forms by the welding together of hot volcanic glass shards at the base of pyroclastic flows.

Unclassified area (for air quality)—An area that cannot be classified on the basis of available information as meeting or not meeting the federal primary or secondary ambient air quality standard for the pollutant.

Unplanned ignition—Any fire started via lightning or natural causes.

Utility corridor—Tract of land varying in width and forming a passageway through which various commodities, such as oil, gas, and electricity, are transported.

Valid existing rights—Documented legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include fee title ownership, mineral rights, ROWs, easements, permits, and licenses. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.

Vertebrate—All animal taxa within the subphylum Vertebrata (chordates with backbones), including all mammals, birds, reptiles, amphibians, and fish.

Visibility (air quality)—A measure of the ability to see and identify objects at different distances.

Visual resources—The visible physical features on a landscape, (topography, water, vegetation, animals, structures, and other features) that comprise the scenery of the area.

Volatile organic compounds—Organic chemicals all contain the element carbon. Organic chemicals are the basic chemicals found in living things and in products derived from living things, such as coal, petroleum, and refined petroleum products. Volatile chemicals readily produce vapors; at room temperature and normal atmospheric pressure, vapors escape easily from volatile liquid chemicals. Volatile organic chemicals include gasoline, industrial chemicals such as benzene, solvents such as toluene and xylene, and tetrachloroethylene (perchloroethylene is the principal dry cleaning solvent). Many volatile organic chemicals are also hazardous air pollutants.

Wilderness characteristics—The attributes enumerated in the “definition of wilderness” found in Section 2(c) of the Wilderness Act of 1964. The wilderness characteristics are the area’s size, apparent naturalness, outstanding opportunities for solitude or primitive recreation, and any supplemental features or values present.

Watershed—Topographical region or area delineated by water draining to a particular watercourse or body of water.

Wilderness—A congressionally designated area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, that is protected and managed to preserve its natural conditions and that has the following characteristics:

- Generally appears to have been affected mainly by the forces of nature, with human imprints substantially unnoticeable
- Has outstanding opportunities for solitude or a primitive and unconfined type of recreation
- Has at least 5,000 acres or is large enough to make practical its preservation and use in an unimpaired condition
- May also contain ecological, geological, or other features of scientific, educational, scenic, or historical value

The definition is contained in Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

Wilderness Study Area (WSA)—An area inventoried, found to have wilderness characteristics, and managed to preserve those characteristics under authority of the review of public lands required by Section 603 of FLPMA.

Wildfire—A general term describing any non-structure fire that occurs in the wild. Wildfires are categorized into two distinct types (USDA and DOI 2009):

- Wildfires—Unplanned ignitions or prescribed fires that are declared wildfires
- Prescribed fires—Planned ignitions

Withdrawal—An action that restricts the use of public land and segregates the land from the operation of some or all of the public land and mineral laws. Withdrawals are also used to transfer jurisdiction of management of public lands to other federal agencies.

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Appendix A

Alternatives Figures

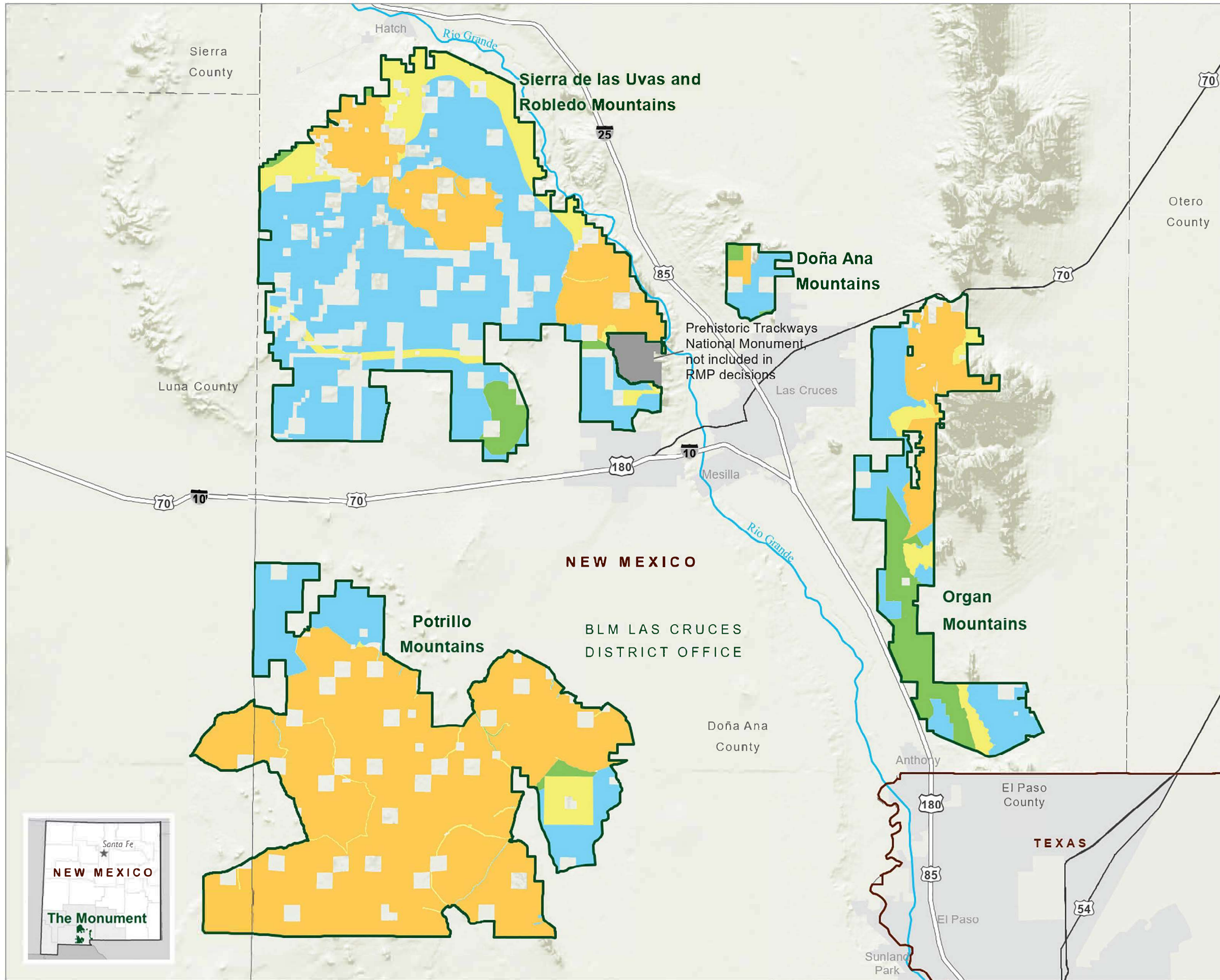
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Appendix A. Alternatives Figures

LIST OF FIGURES

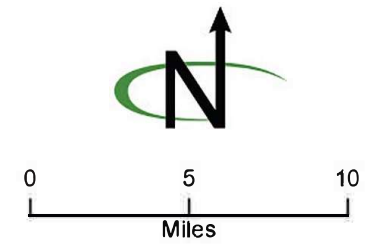
- 2-1 Alternative A: Visual Resource Management
- 2-2 Alternatives B, C, and D: Visual Resource Management
- 2-3 Alternatives A, B, C, and D: Livestock Grazing
- 2-4 Alternatives A, B, C, and D: Minerals
- 2-5 Alternative A: Special Recreation Management Areas
- 2-6 Alternative B: Special Recreation Management Areas
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- 2-8 Alternative D: Special Recreation Management Areas
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- 2-25 Alternatives A, B, C, and D: Trails
- 2-26 Alternatives A, B, C, and D: Wilderness Areas and National Natural Landmarks

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**Figure 2-1
Alternative A: Visual Resource Management**

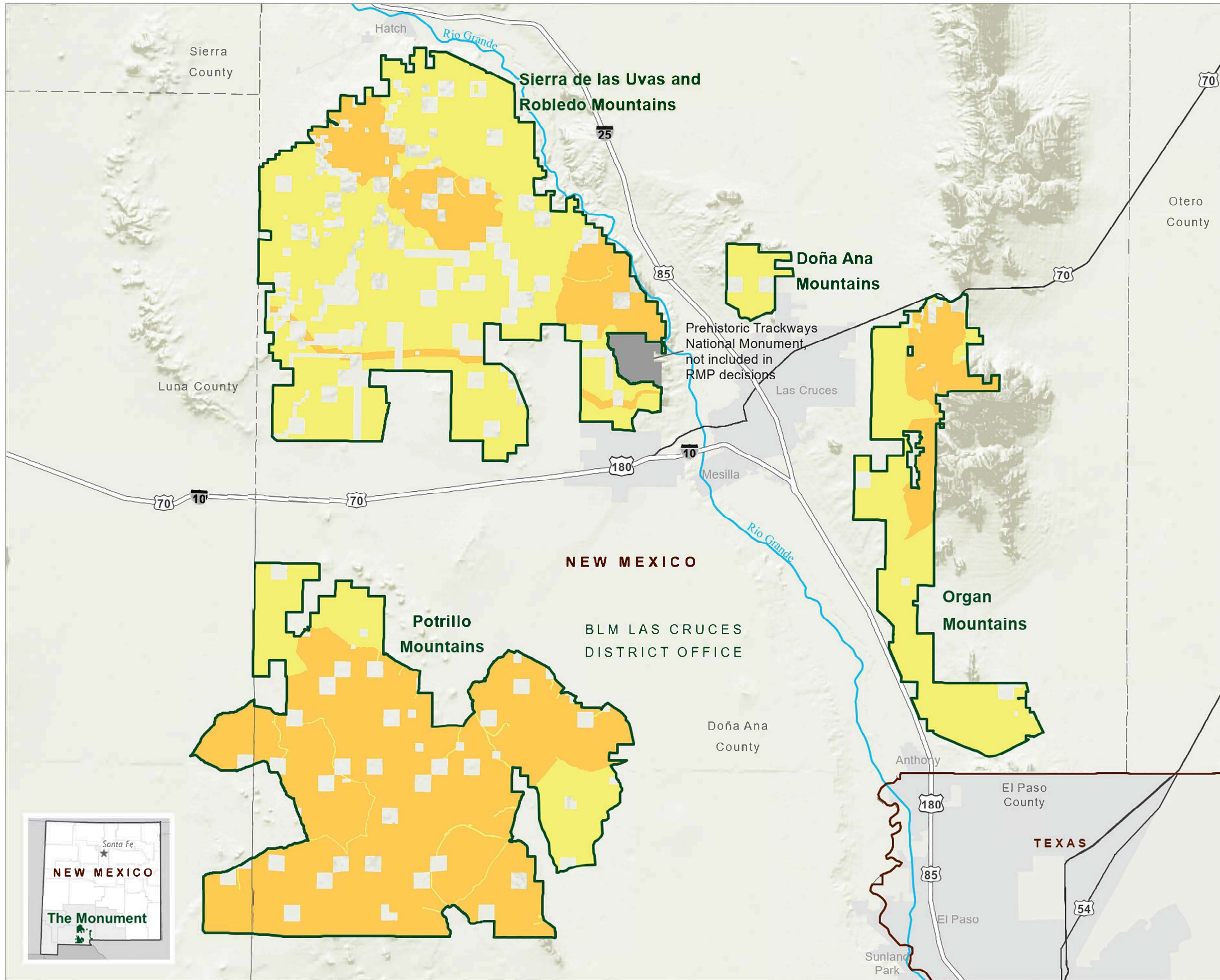
- VRM class I
- VRM class II
- VRM class III
- VRM class IV
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 November 21, 2023, OrganMtnsRMP_alts_Res_VRM_AltA.mxd
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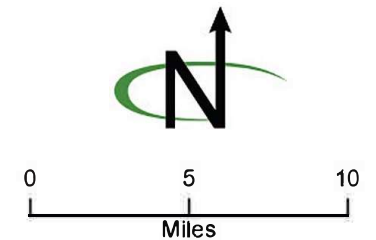
Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum





**Figure 2-2
Alternatives B, C, and D: Visual
Resource Management**

- VRM class I
- VRM class II
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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 GRS 1980 Spheroid, NAD83 Datum



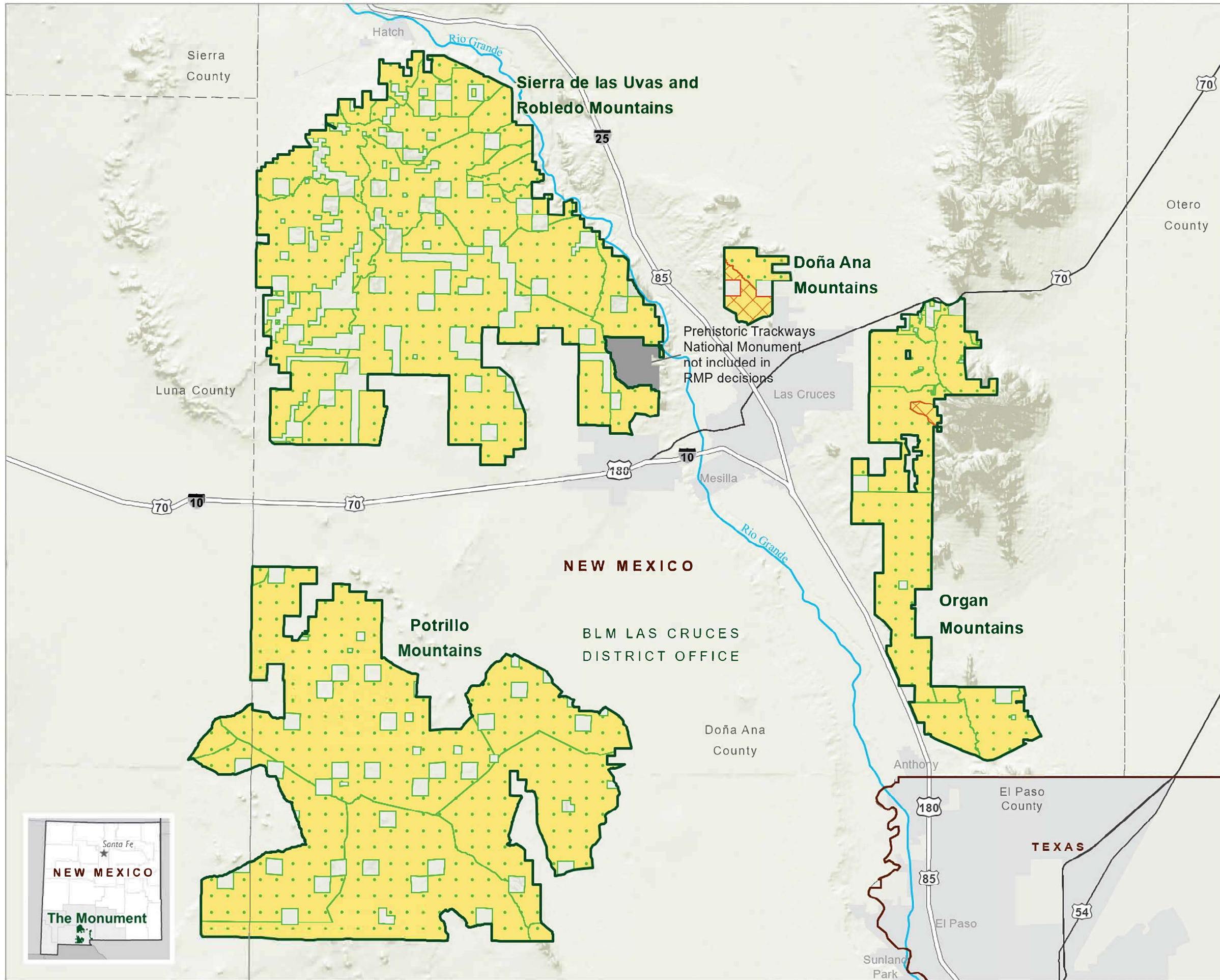




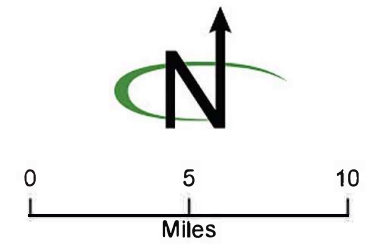


Figure 2-3
Alternatives A, B, C, and D: Livestock
Grazing

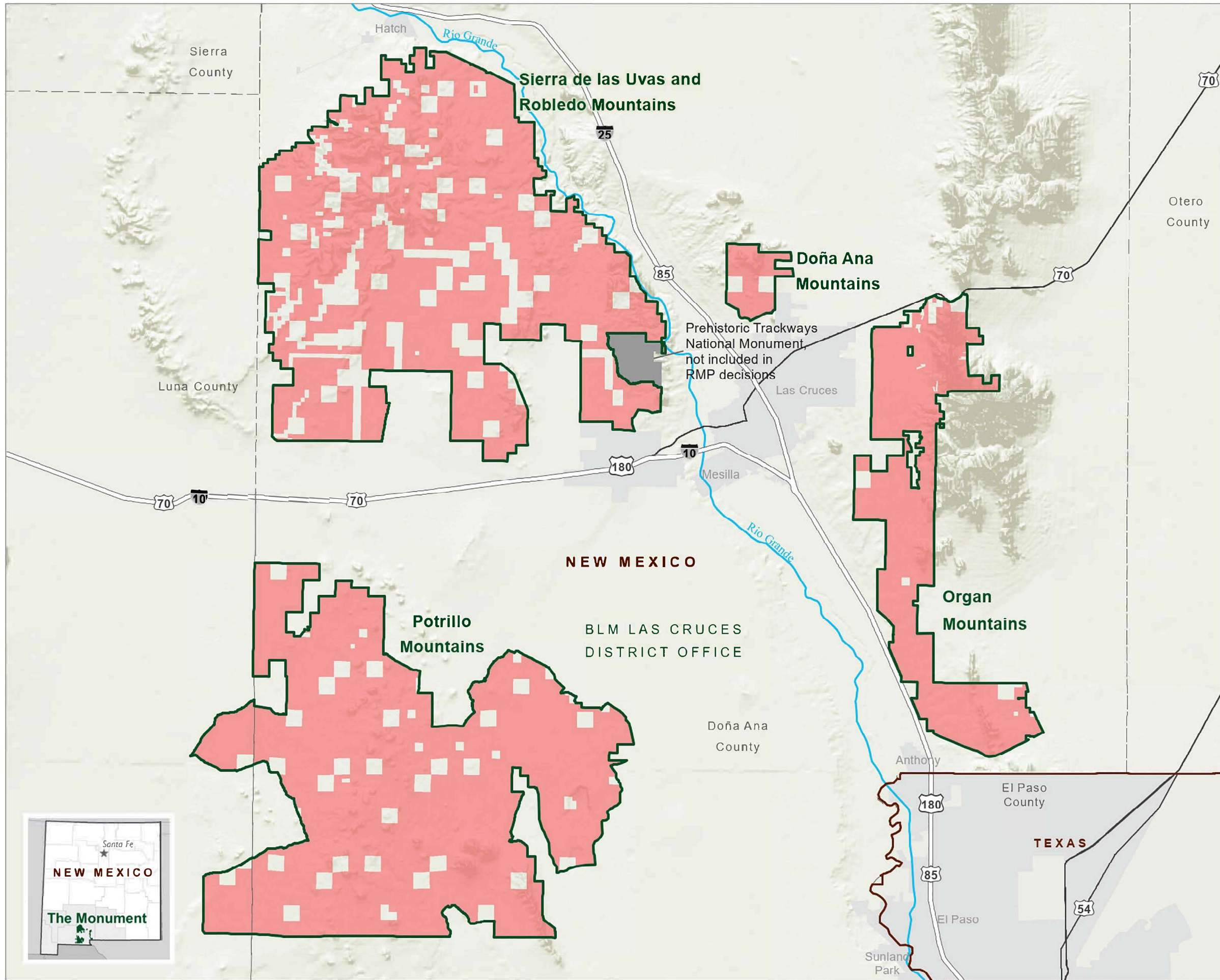
-  Unavailable for standard term livestock grazing leases
-  Available for livestock grazing
-  Bureau of Land Management (the surface decision area for livestock grazing)
-  Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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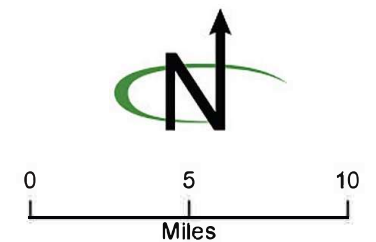
Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum





**Figure 2-4
Alternatives A, B, C, and D:
Minerals**

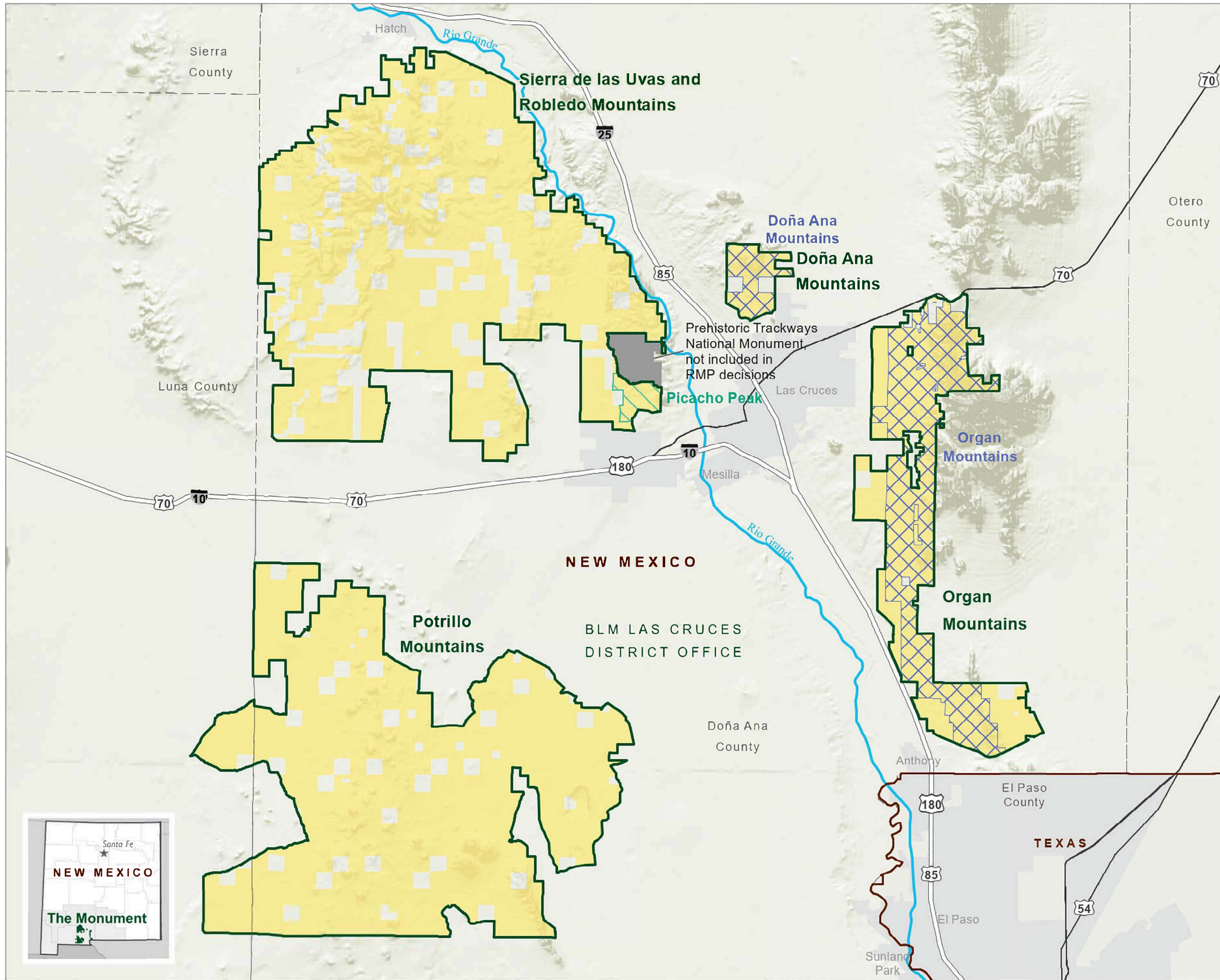
- Withdrawn from mineral entry, location, leasing, or sale
- Organ Mountains-Desert Peaks National Monument, the planning area







Source: BLM GIS 2022
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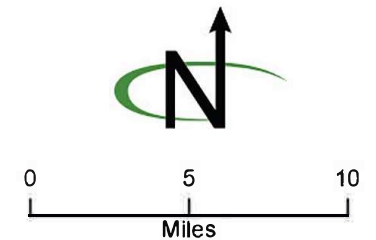
Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum





**Figure 2-5
Alternative A: Special Recreation
Management Areas**

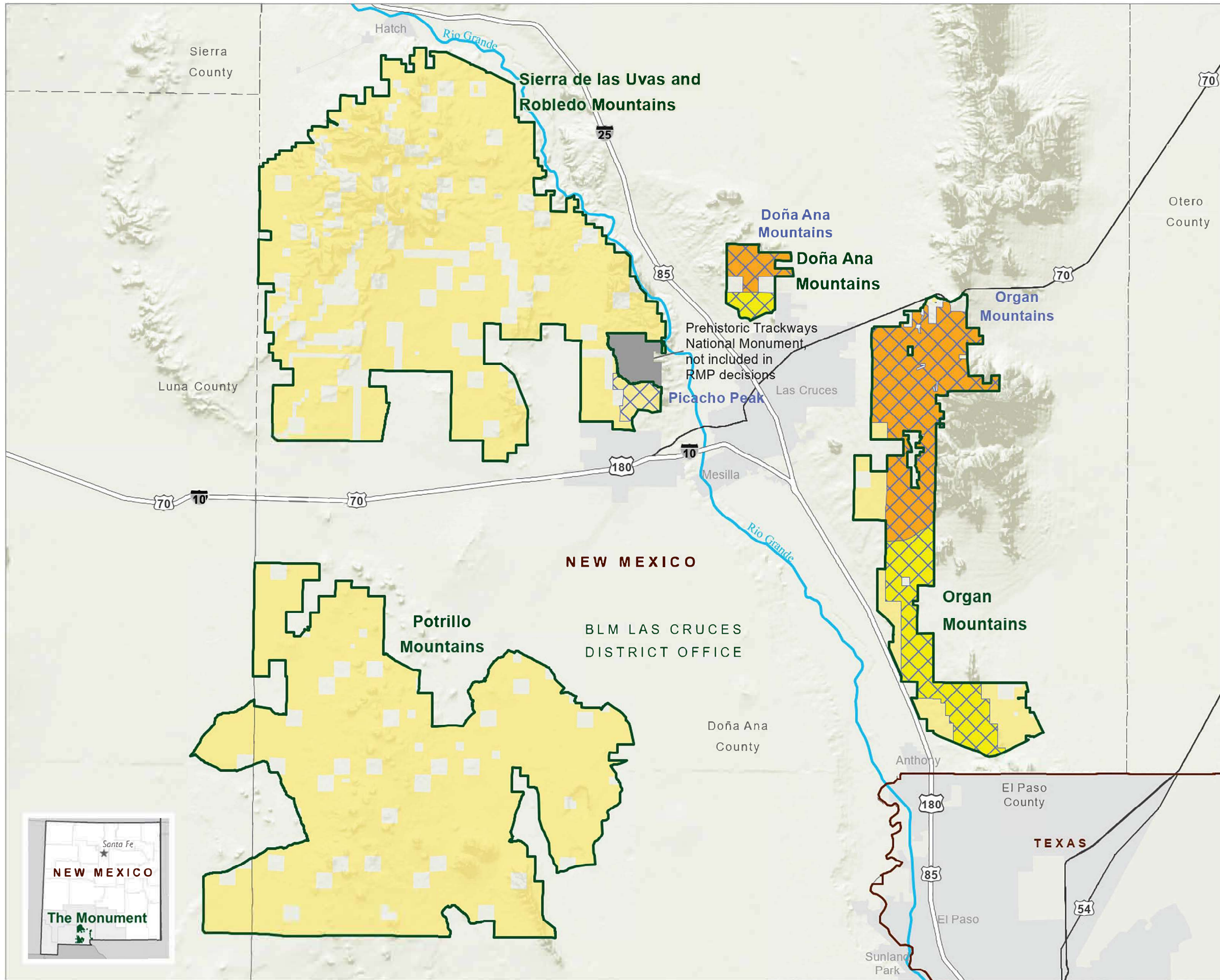
-  Special recreation management area
-  Temporary special management
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument, the planning area








Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 January 26, 2024, OrganMtnsRMP_alts_ResUse_Recreation_AITA.mxd
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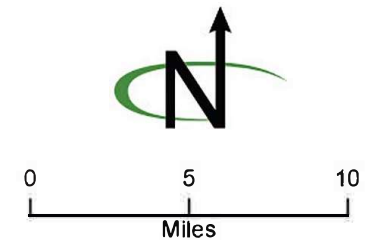
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 GRS 1980 Spheroid, NAD83 Datum





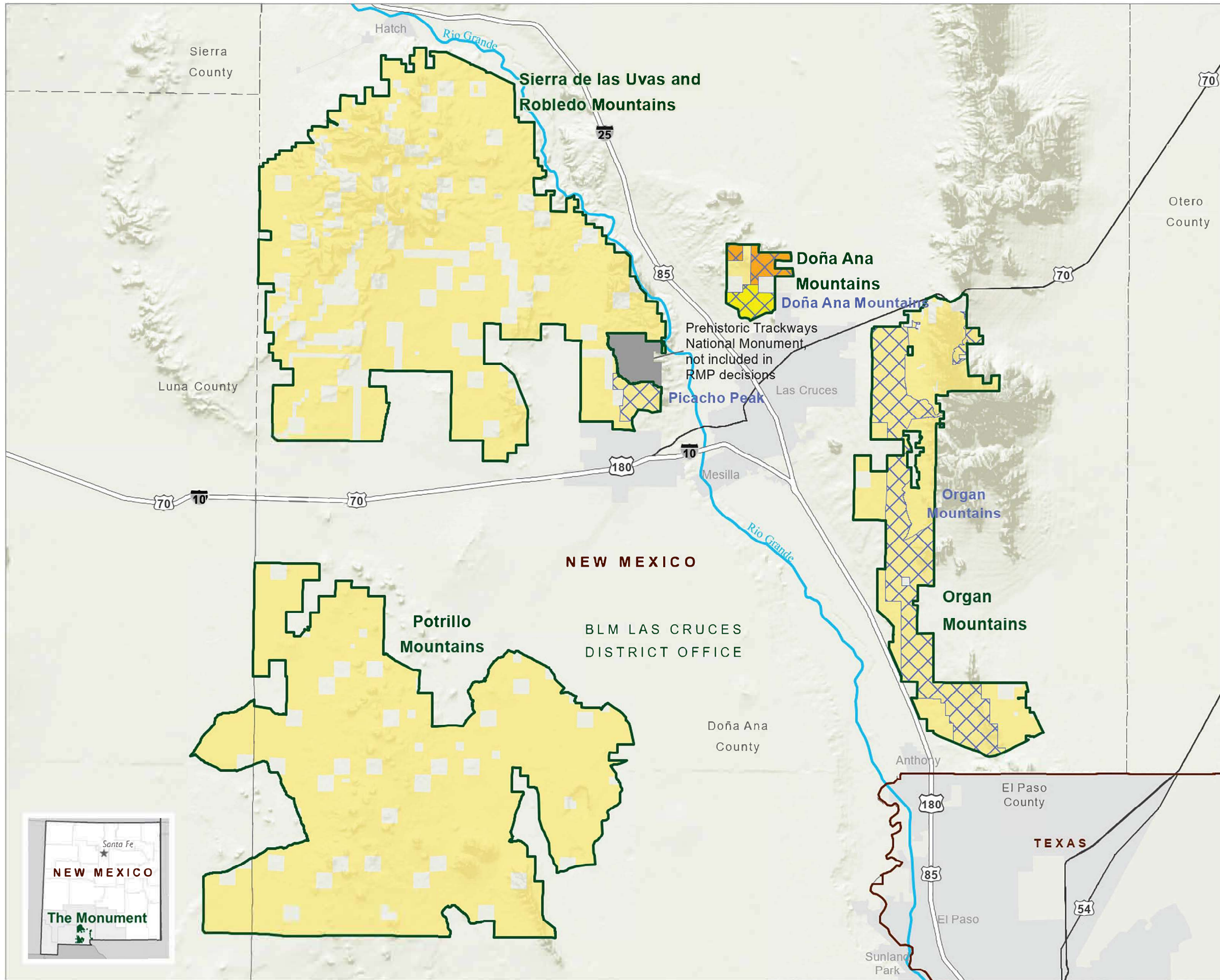
**Figure 2-6
Alternative B: Special Recreation Management Areas**

-  Special recreation management area
-  North recreation management zone (RMZ)
-  South RMZ
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument, the planning area








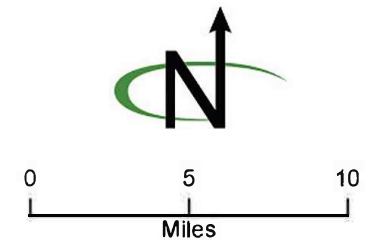
Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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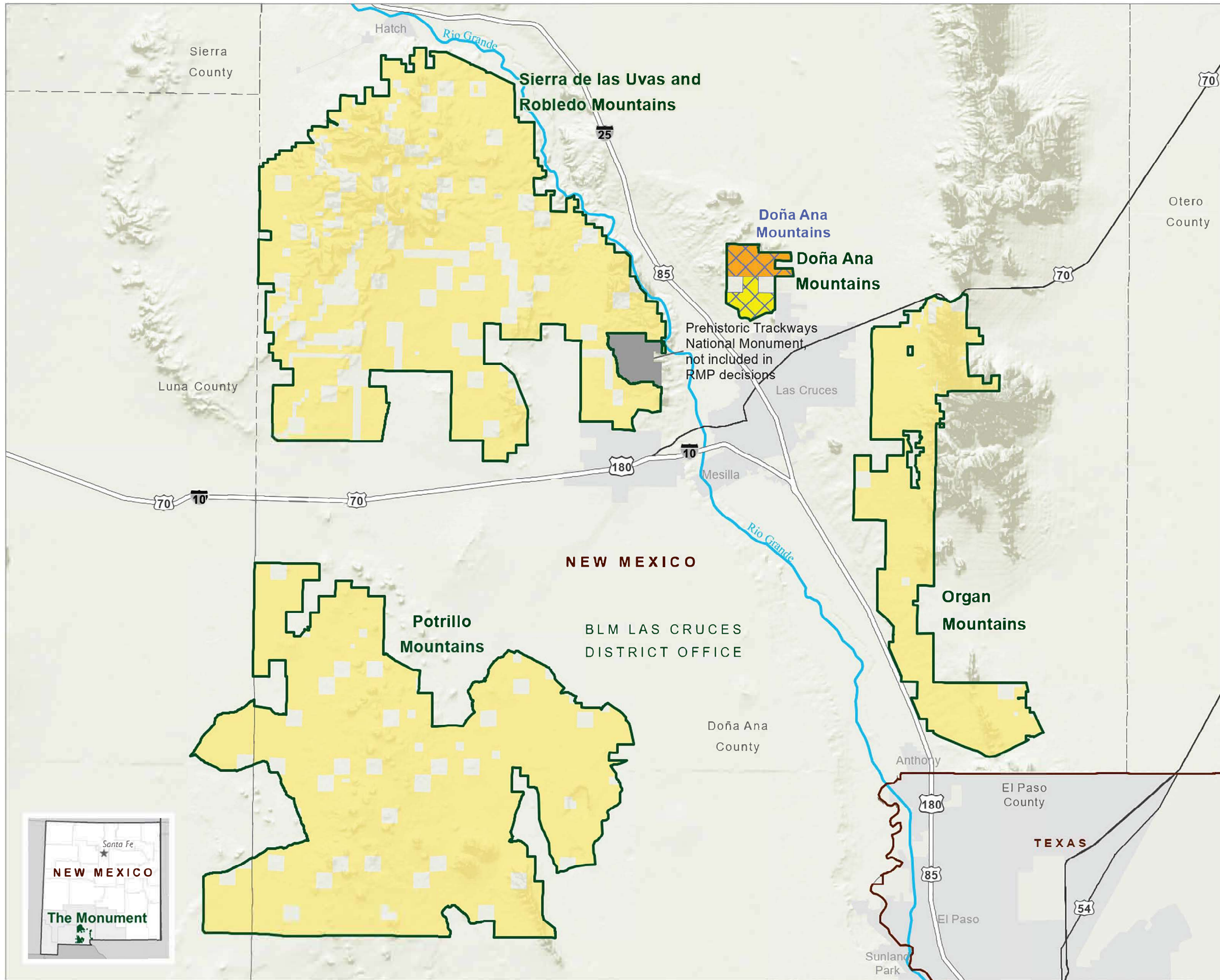
**Figure 2-7
Alternative C: Special Recreation Management Areas**

-  Special recreation management area
-  North recreation management zone (RMZ)
-  South RMZ
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument, the planning area








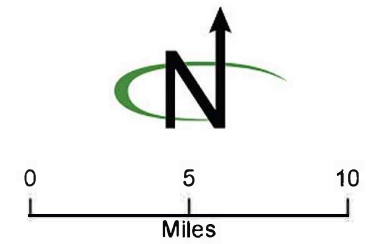
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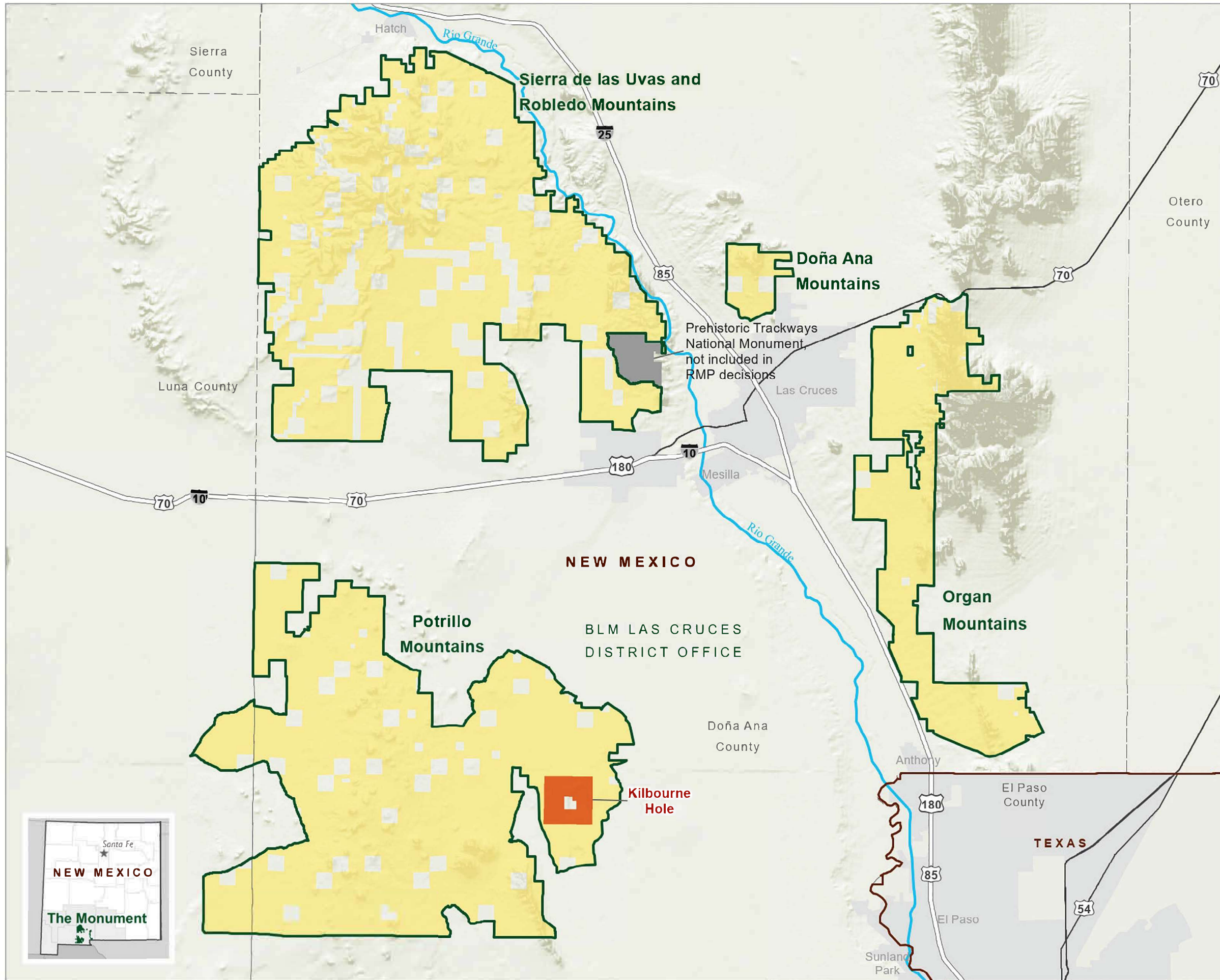
**Figure 2-8
Alternative D: Special Recreation Management Areas**

-  Special recreation management area
-  North recreation management zone (RMZ)
-  South RMZ
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument, the planning area



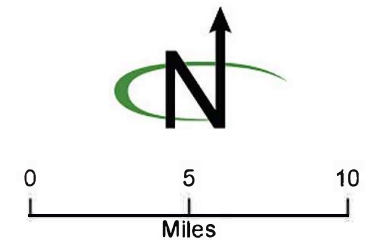
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**Figure 2-9
Alternative A:
Public Safety No-Shooting Zones**

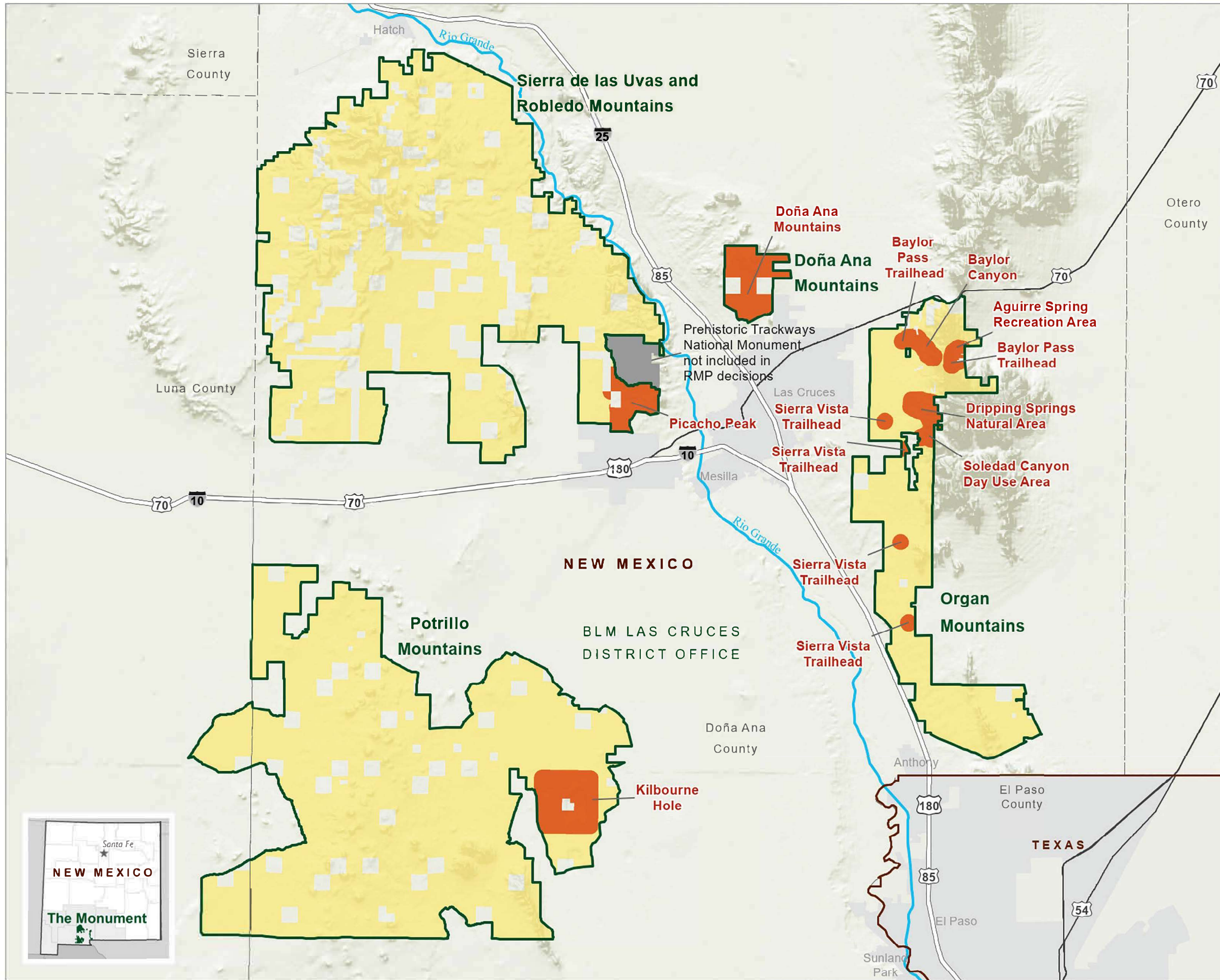
- Recreational shooting prohibited
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
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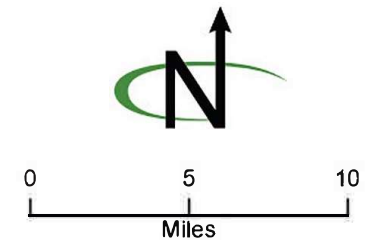
Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum





**Figure 2-10
Alternative B:
Public Safety No-Shooting Zones**

- Recreational shooting prohibited
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
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 GRS 1980 Spheroid, NAD83 Datum

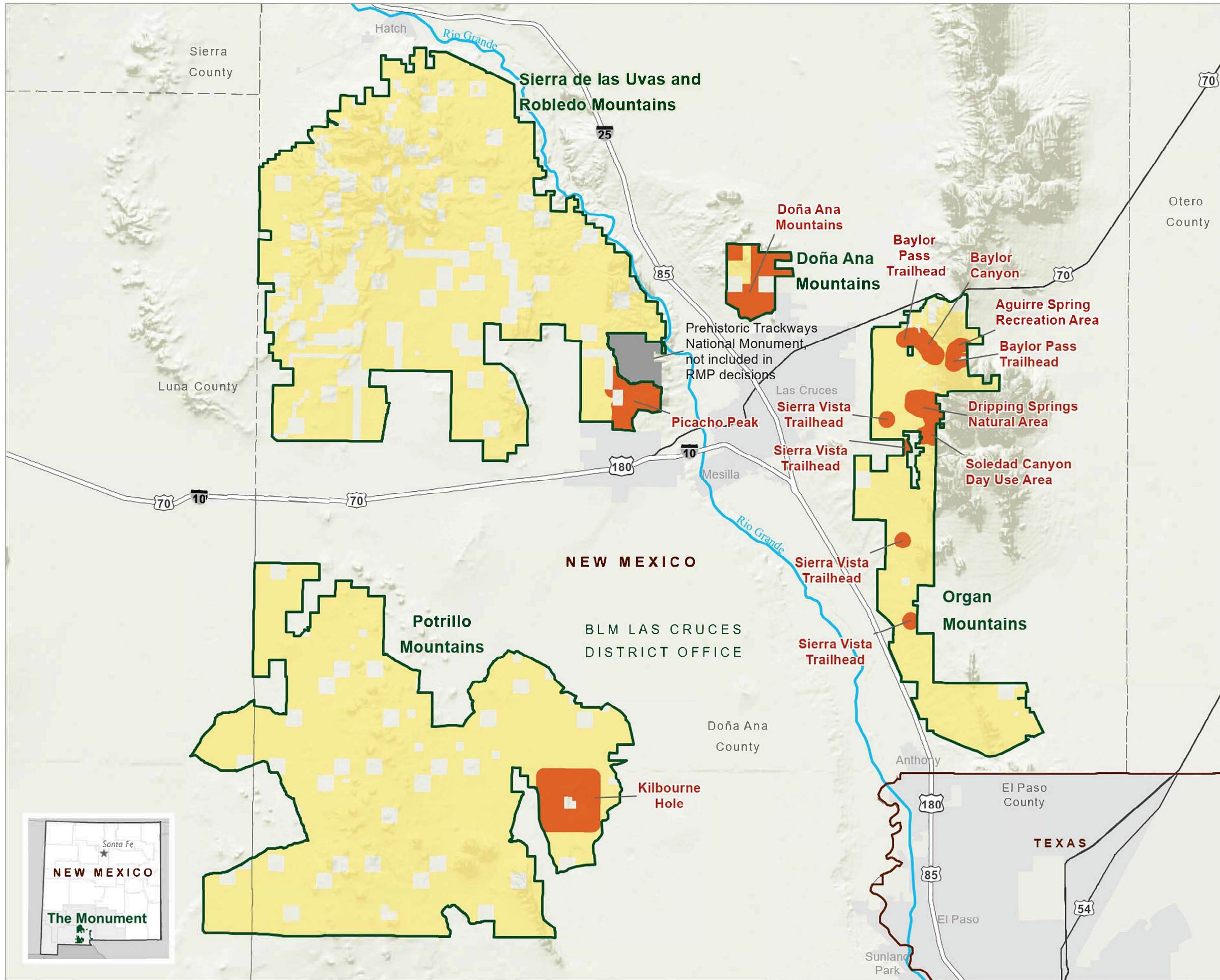
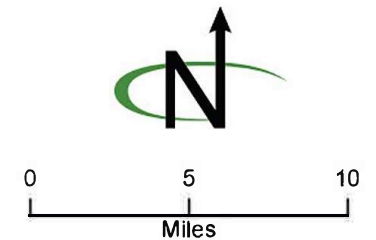


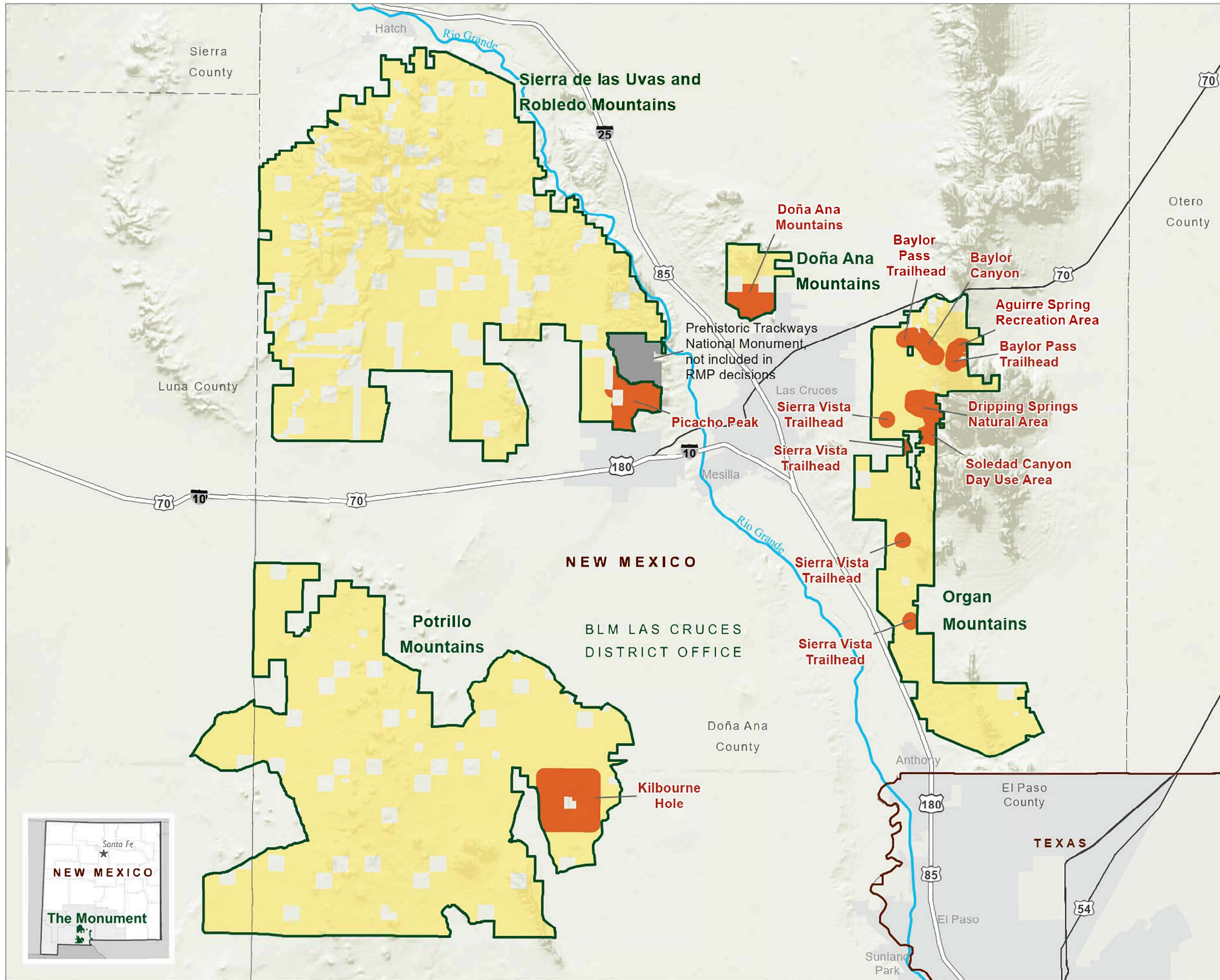
Figure 2-11
Alternative C:
Public Safety No-Shooting Zones

- Recreational shooting prohibited
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument, the planning area



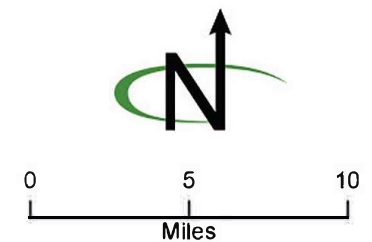
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Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum



**Figure 2-12
Alternative D:
Public Safety No-Shooting Zones**

- Recreational shooting prohibited
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument, the planning area



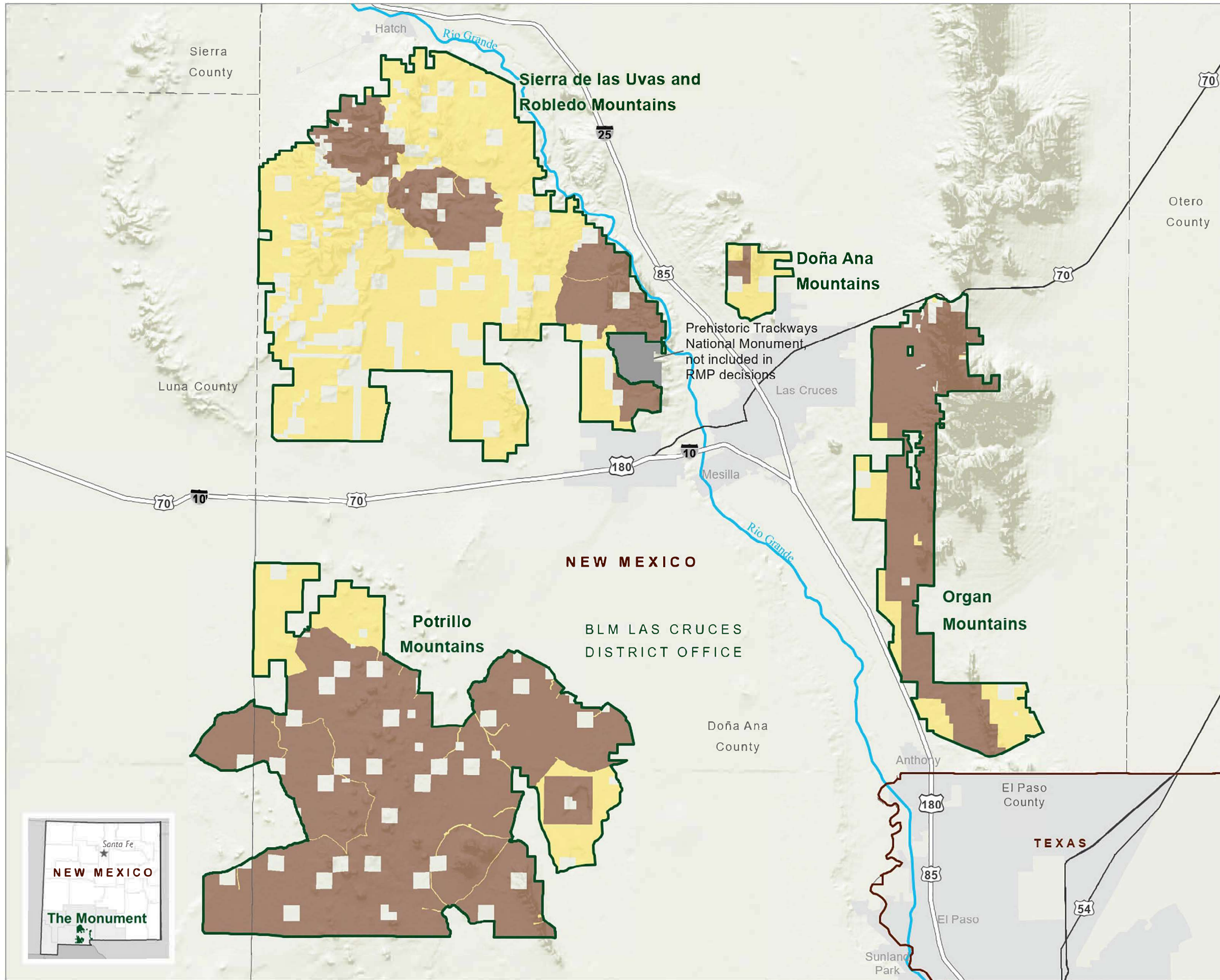
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Universal Transverse Mercator Zone 13, Units Meters
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Figure 2-13
Alternative A: Right-of-Way Exclusion and Avoidance Areas

- Right-of-way exclusion
- Right-of-way avoidance
- Organ Mountains-Desert Peaks National Monument, the planning area



Otero County

Las Cruces

Mesilla

Doña Ana County

El Paso County

Sunland Park

NEW MEXICO

TEXAS

BLM LAS CRUCES DISTRICT OFFICE

Sierra County

Luna County

Potrillo Mountains

Doña Ana Mountains

Organ Mountains

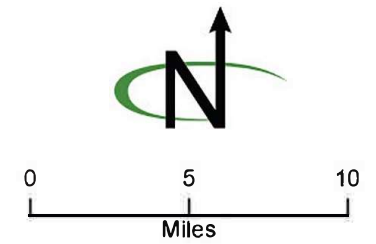
Sierra de las Uvas and Robledo Mountains

Prehistoric Trackways National Monument not included in RMP decisions

Hatch

Rio Grande

Rio Grande



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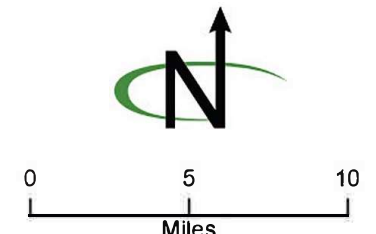
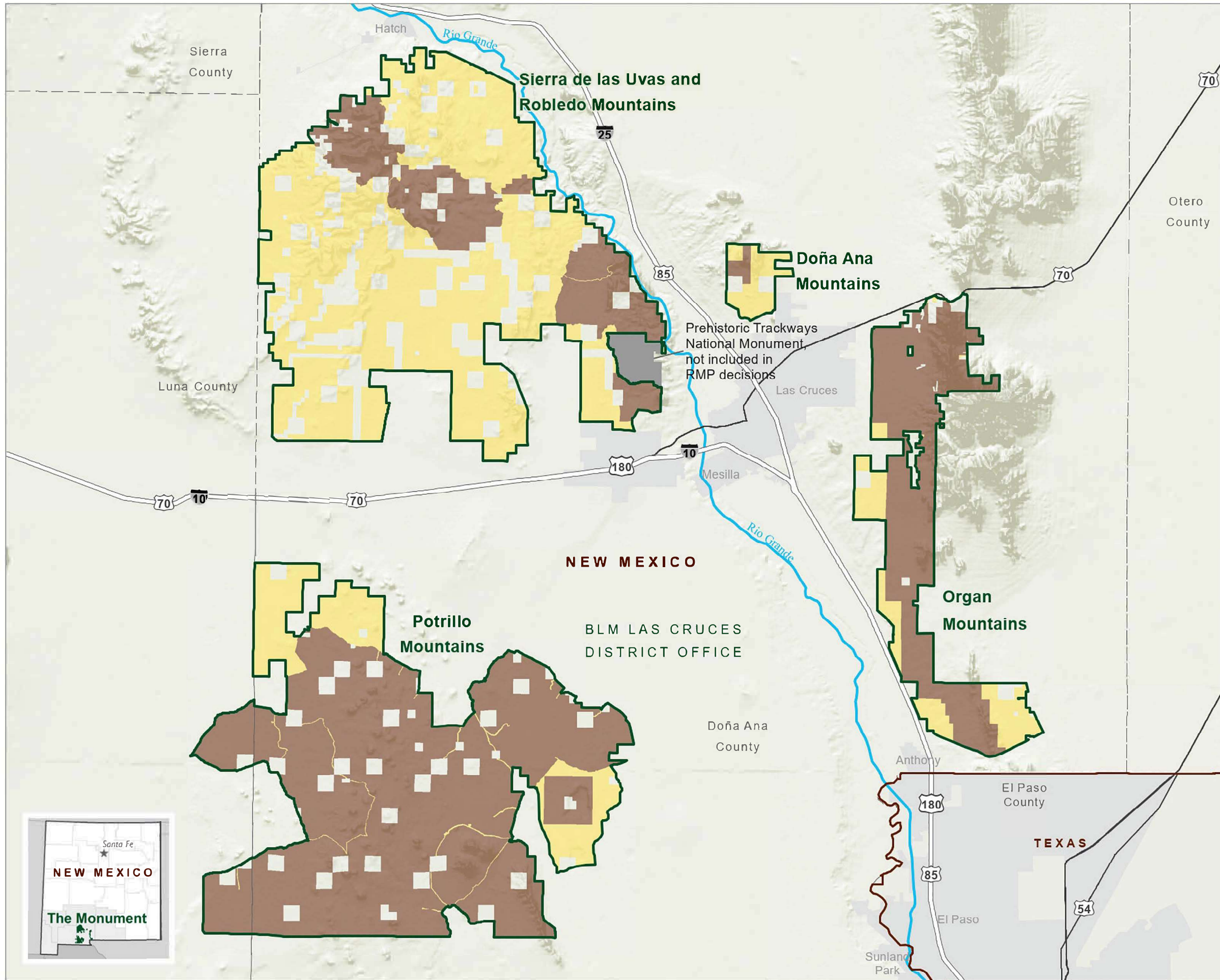
Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum





Figure 2-14
Alternative B: Right-of-Way Exclusion and Avoidance Areas

- Right-of-way exclusion
- Right-of-way avoidance
- Organ Mountains-Desert Peaks National Monument, the planning area



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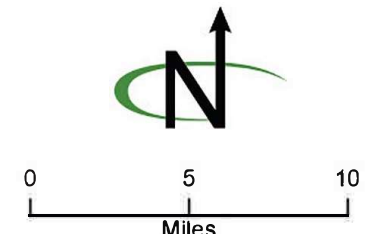
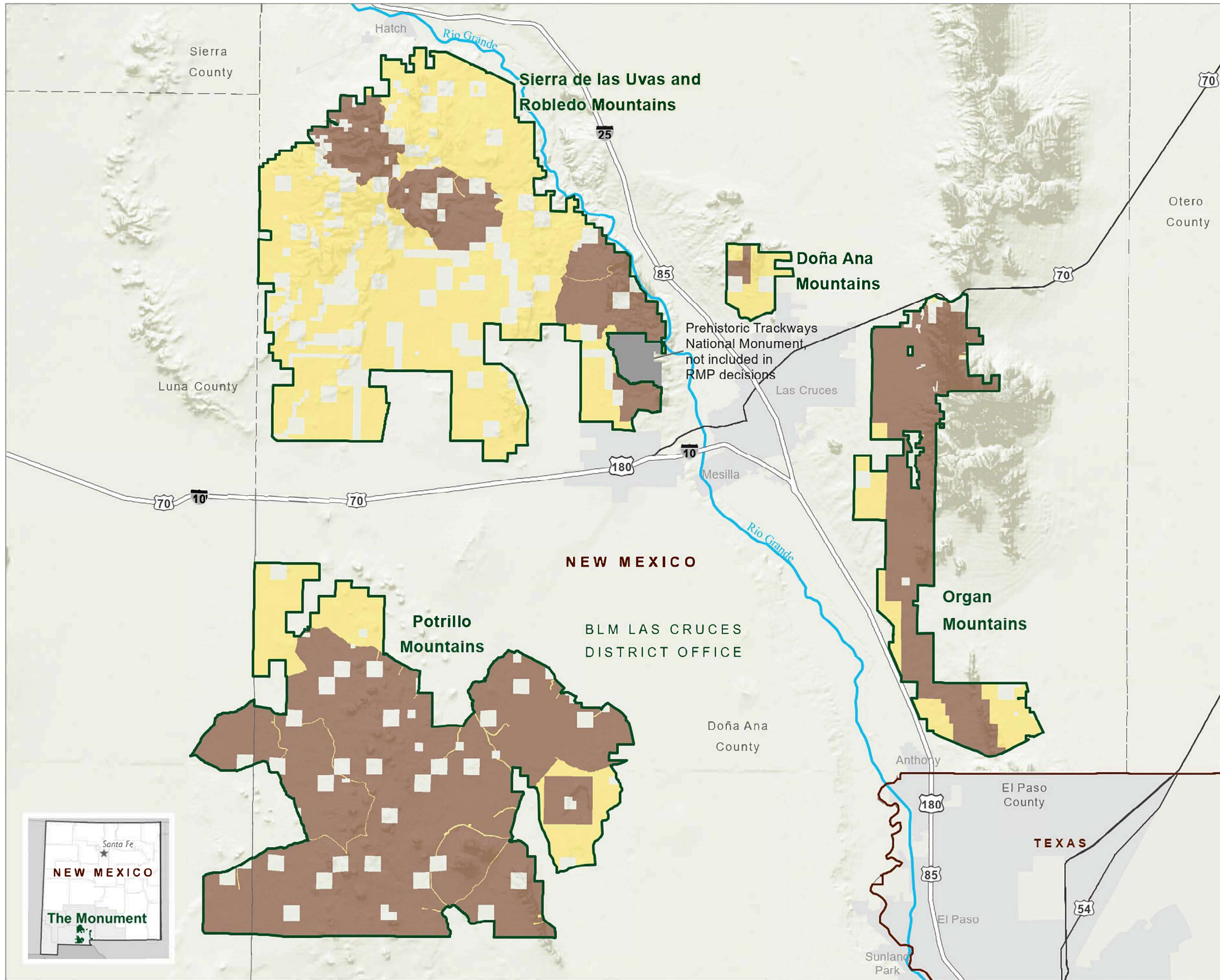
Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum





Figure 2-15
Alternative C: Right-of-Way Exclusion and Avoidance Areas

- Right-of-way exclusion
- Right-of-way avoidance
- Organ Mountains-Desert Peaks National Monument, the planning area



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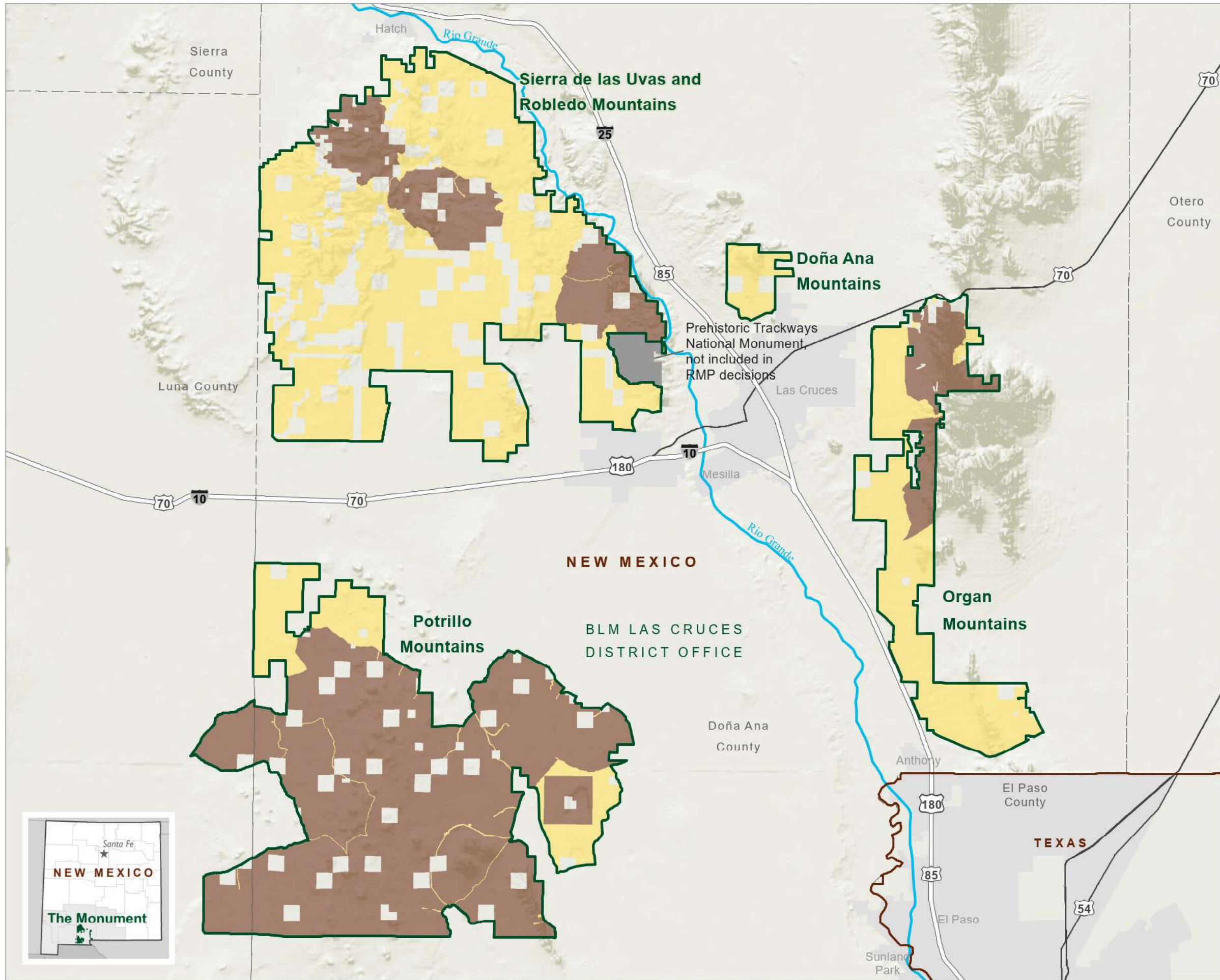
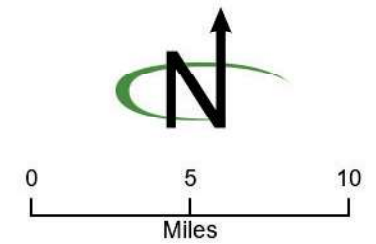


Figure 2-16
Alternative D: Right-of-Way Exclusion
and Avoidance Areas

- Right-of-way exclusion
- Right-of-way avoidance
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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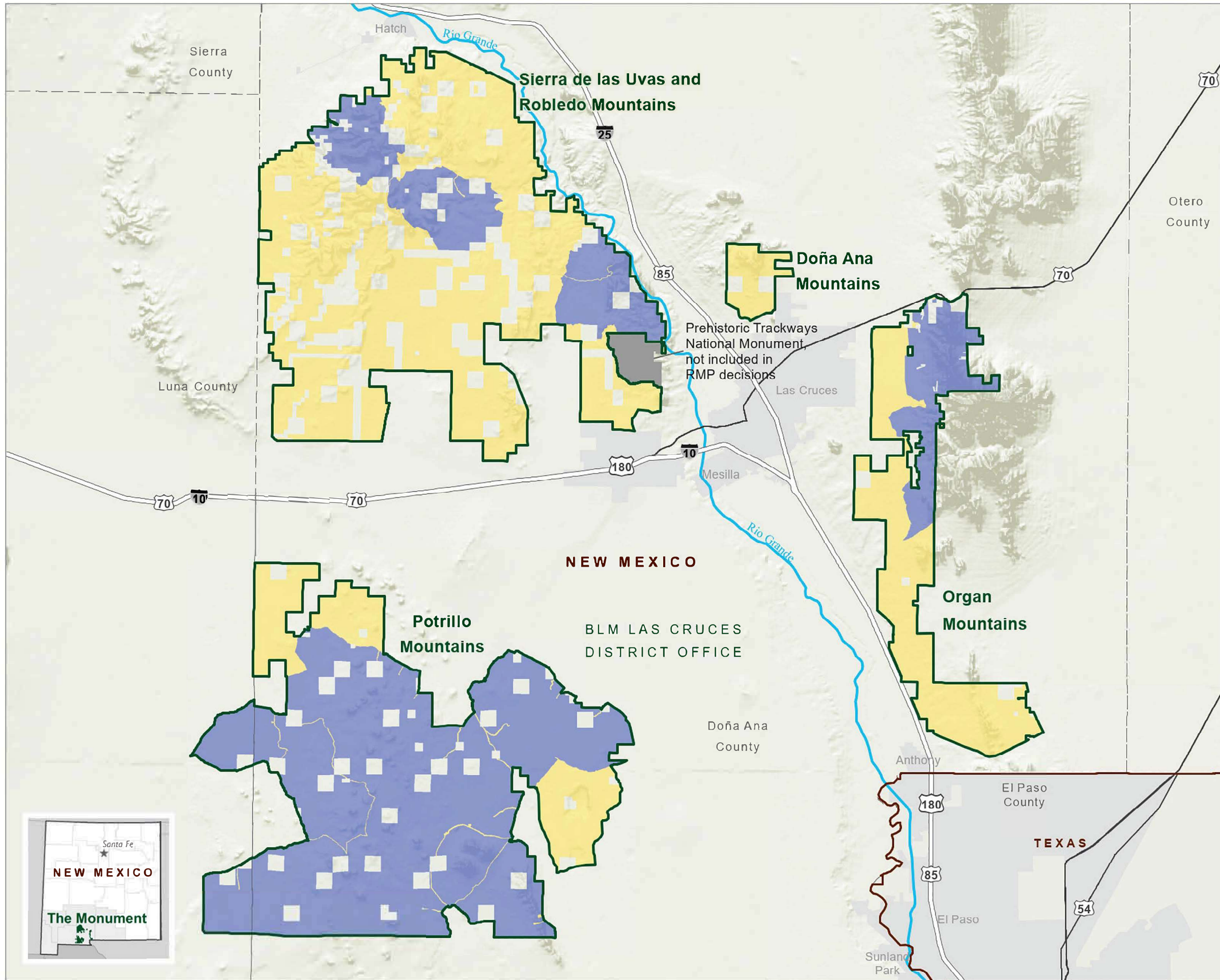


Figure 2-17
Alternative A: Transportation and Access

- Closed to motorized off highway vehicle travel
- Limited to designated routes
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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 GRS 1980 Spheroid, NAD83 Datum



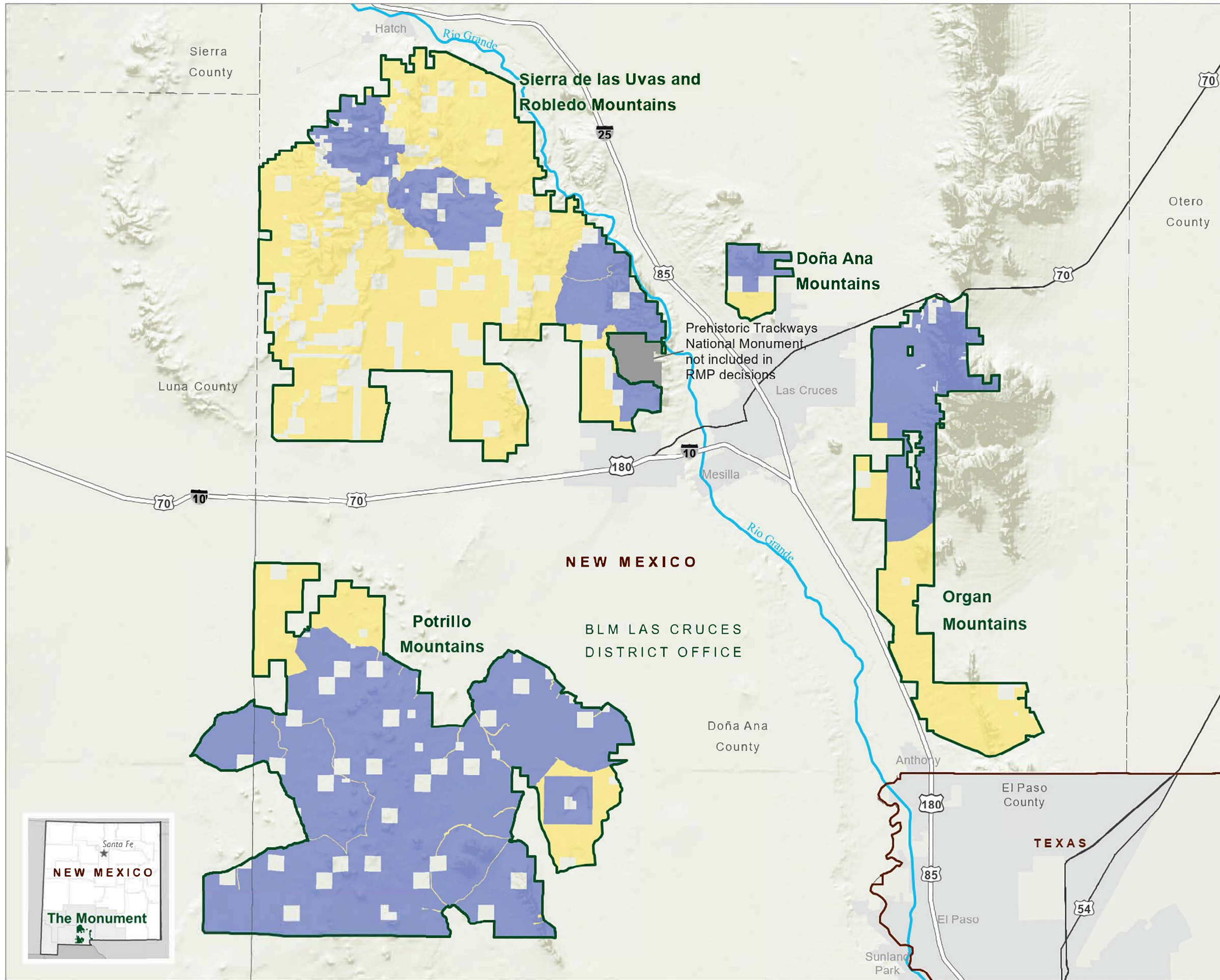
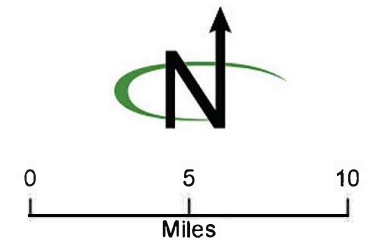


Figure 2-18
Alternative B: Transportation and Access

- Closed to motorized off highway vehicle travel
- Limited to designated routes
- Organ Mountains-Desert Peaks National Monument, the planning area



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 GRS 1980 Spheroid, NAD83 Datum

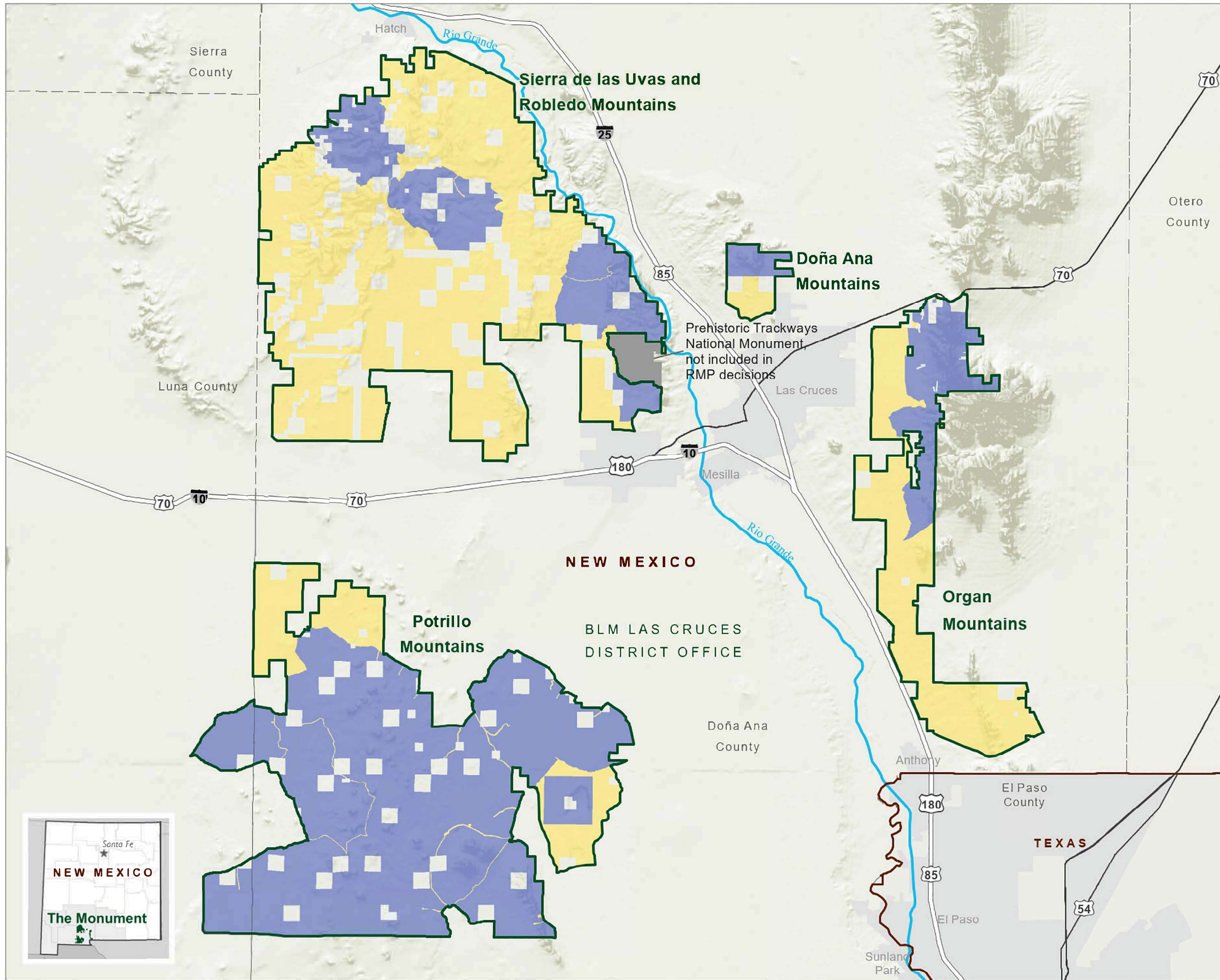
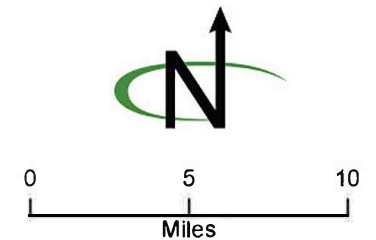


Figure 2-19
Alternative C: Transportation and Access

- Closed to motorized off highway vehicle travel
- Limited to designated routes
- Organ Mountains-Desert Peaks National Monument, the planning area



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 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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 GRS 1980 Spheroid, NAD83 Datum



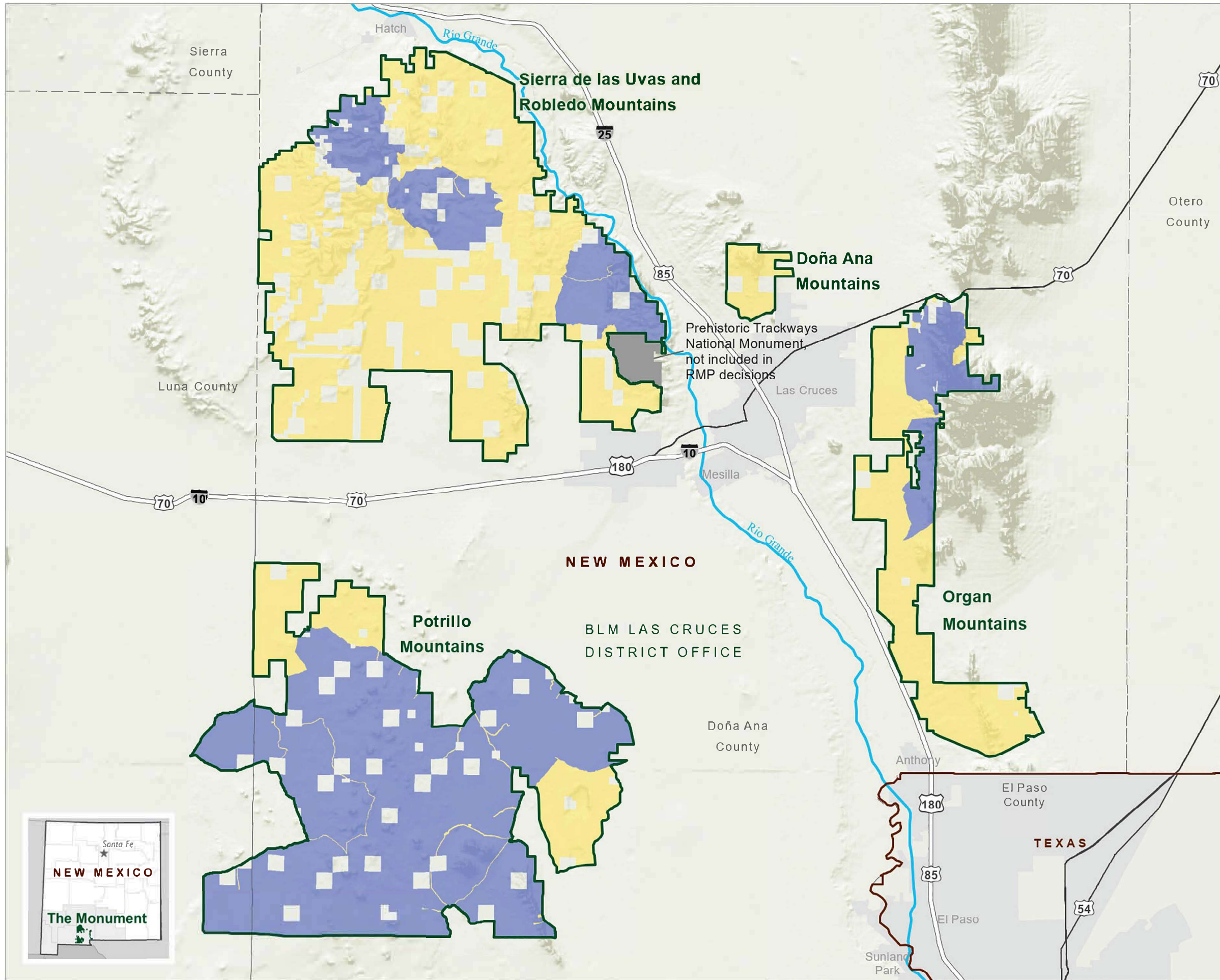
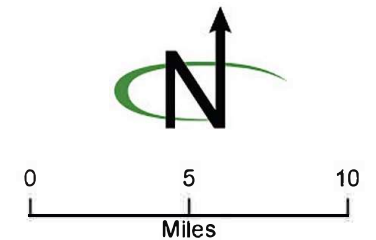


Figure 2-20
Alternative D: Transportation and Access

- Closed to motorized off highway vehicle travel
- Limited to designated routes
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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 GRS 1980 Spheroid, NAD83 Datum



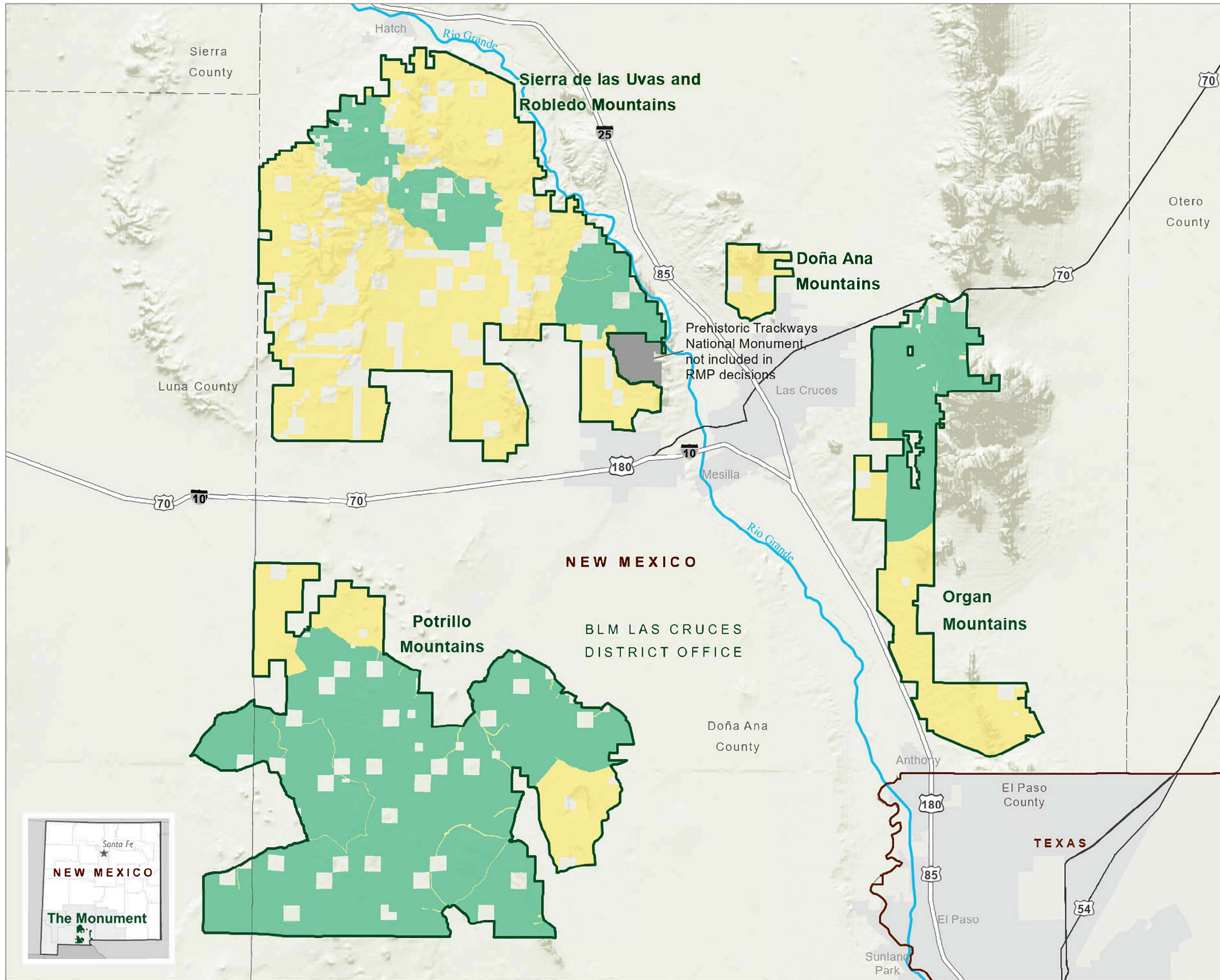
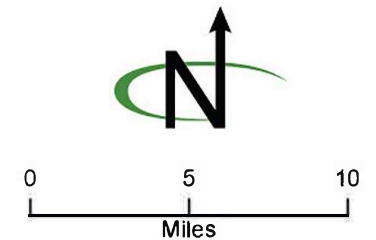


Figure 2-21
Alternative B: Transportation and Access, Mechanized Use

- Closed to mechanized vehicles
- Limited to designated routes
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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Universal Transverse Mercator Zone 13, Units Meters
 GRS 1980 Spheroid, NAD83 Datum



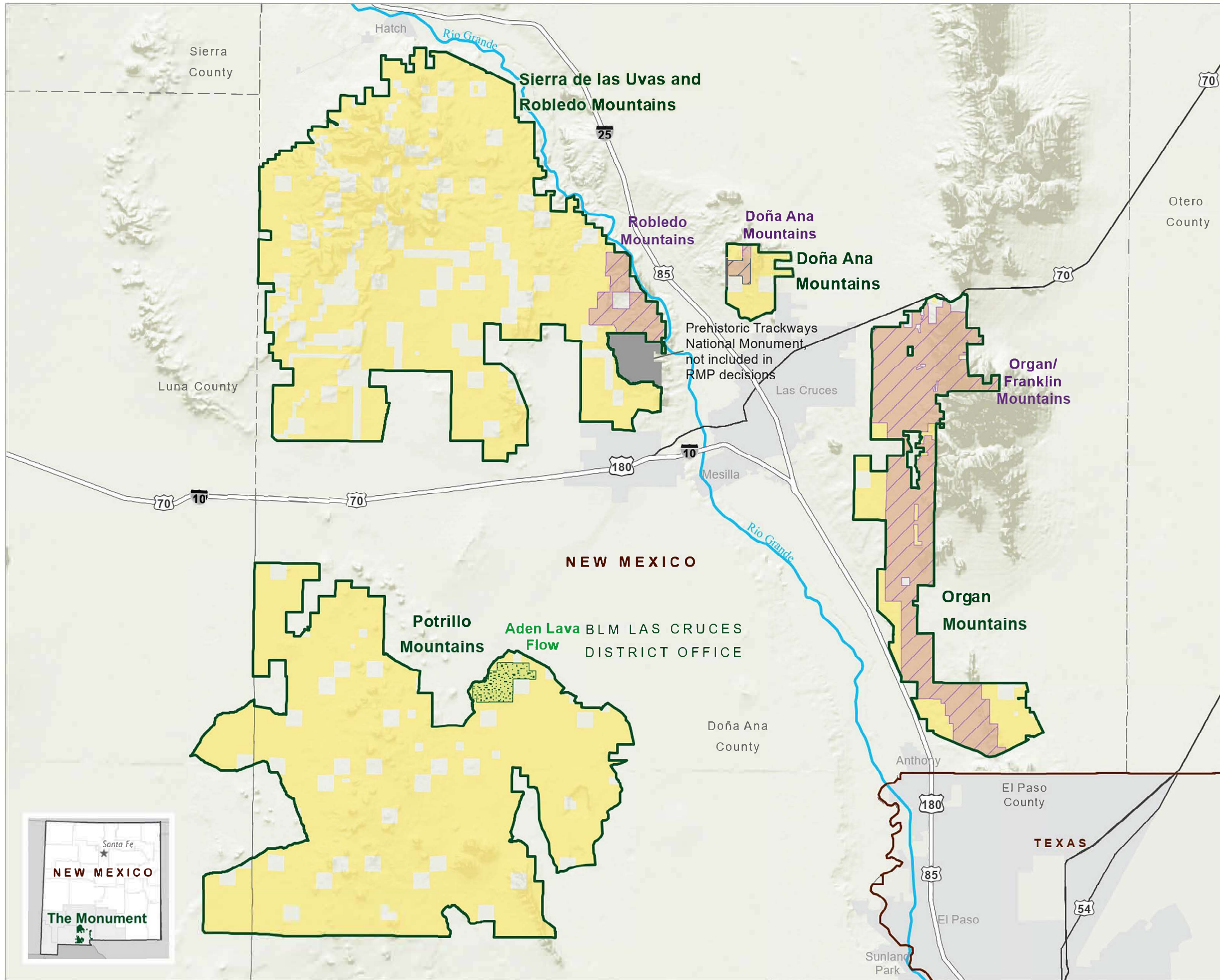




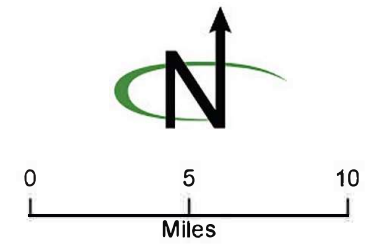


Figure 2-22
Alternative A: Areas of Critical Environmental Concern and Research Natural Areas

-  Area of critical environmental concern
-  Research natural area
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument, the planning area



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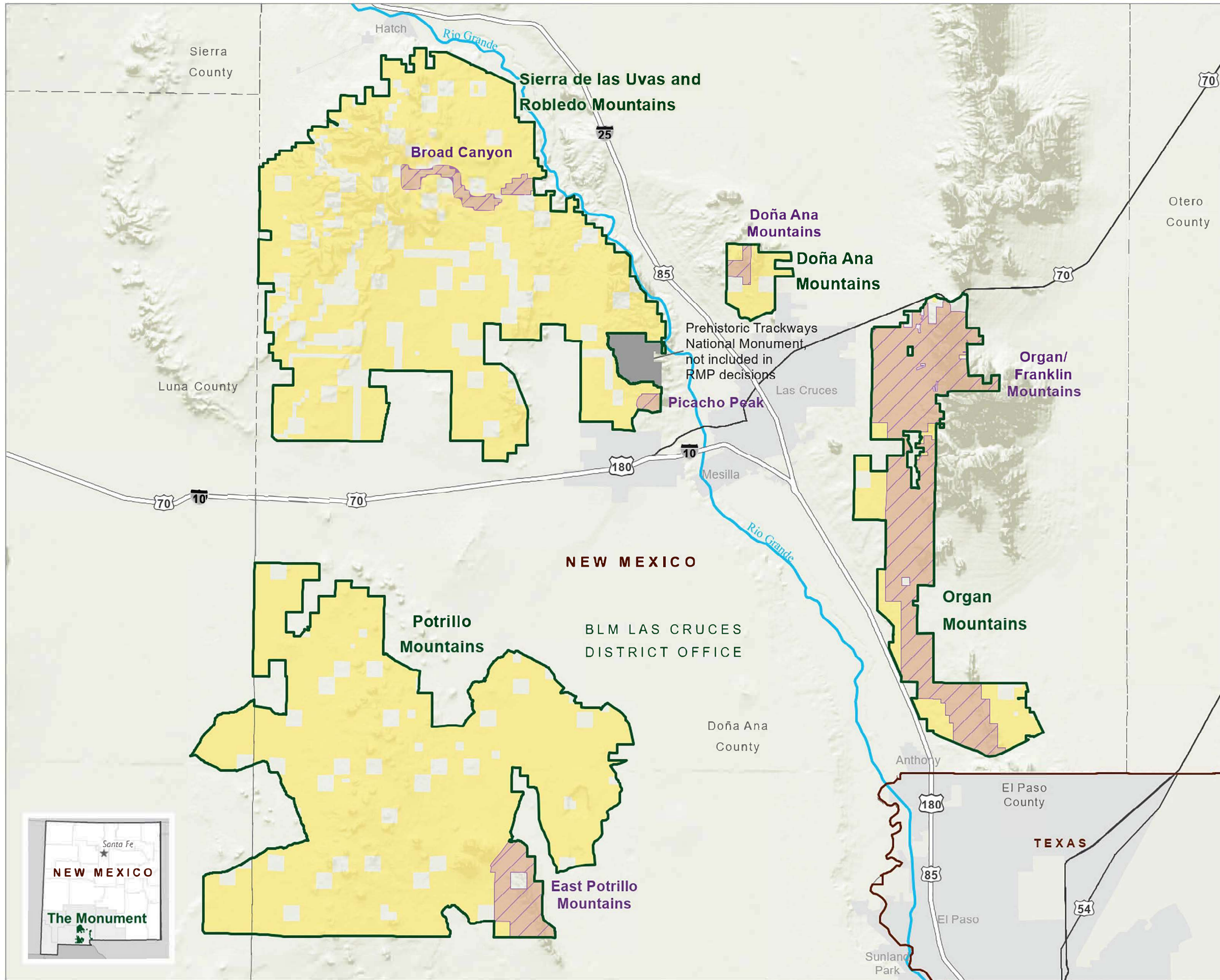



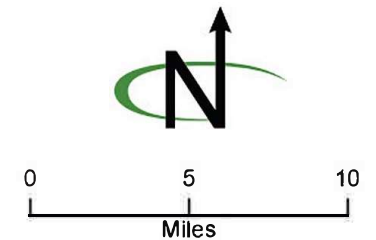


Figure 2-23
Alternative B: Areas of Critical Environmental Concern

-  Area of critical environmental concern
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
 January 26, 2024, OrganMtnsRMP_alts_Special_ACEC_AltB.mxd
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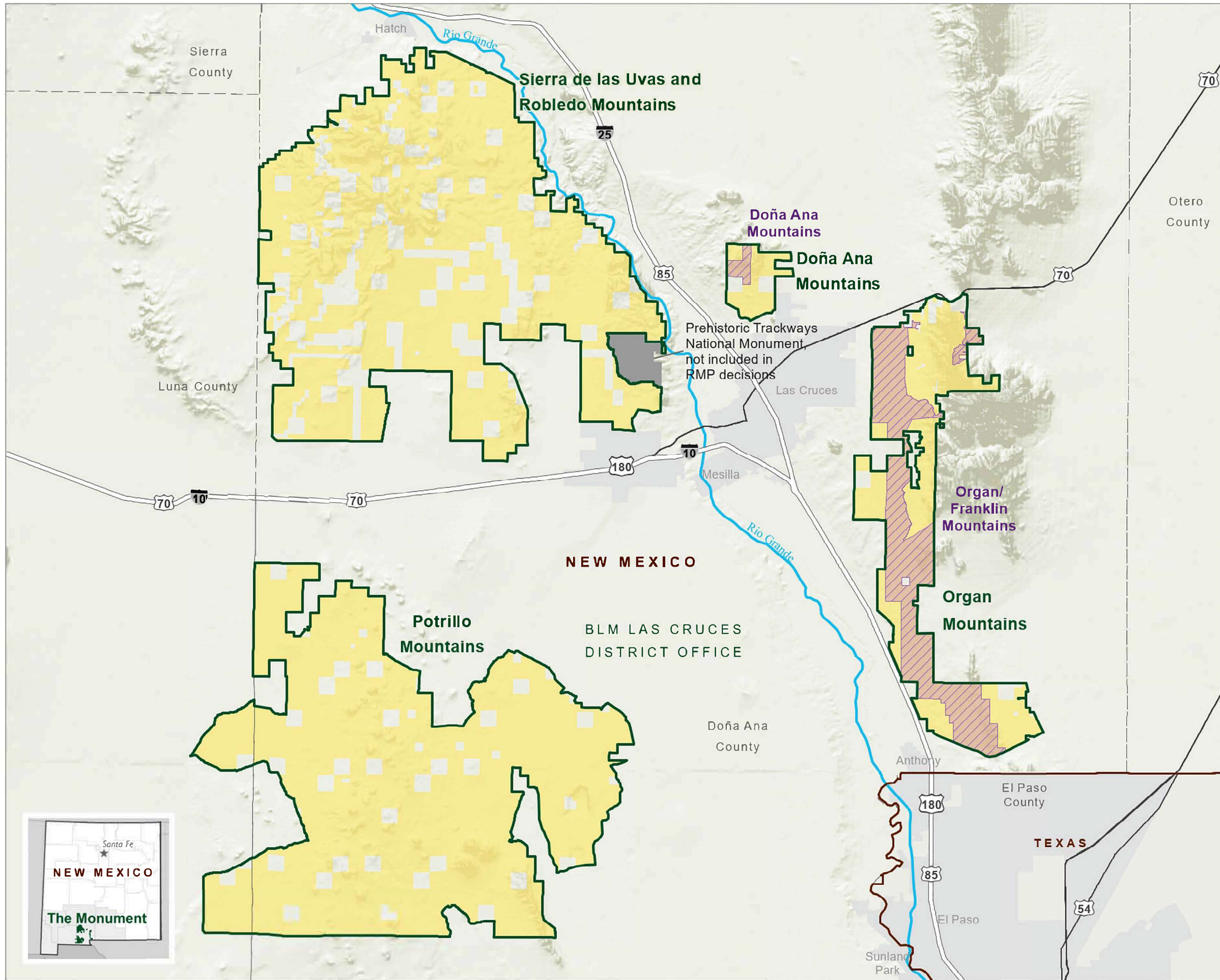



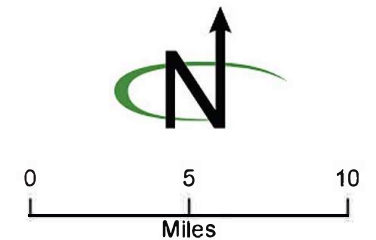


Figure 2-24
Alternative C: Areas of Critical Environmental Concern

-  Area of critical environmental concern
-  Bureau of Land Management (the surface decision area)
-  Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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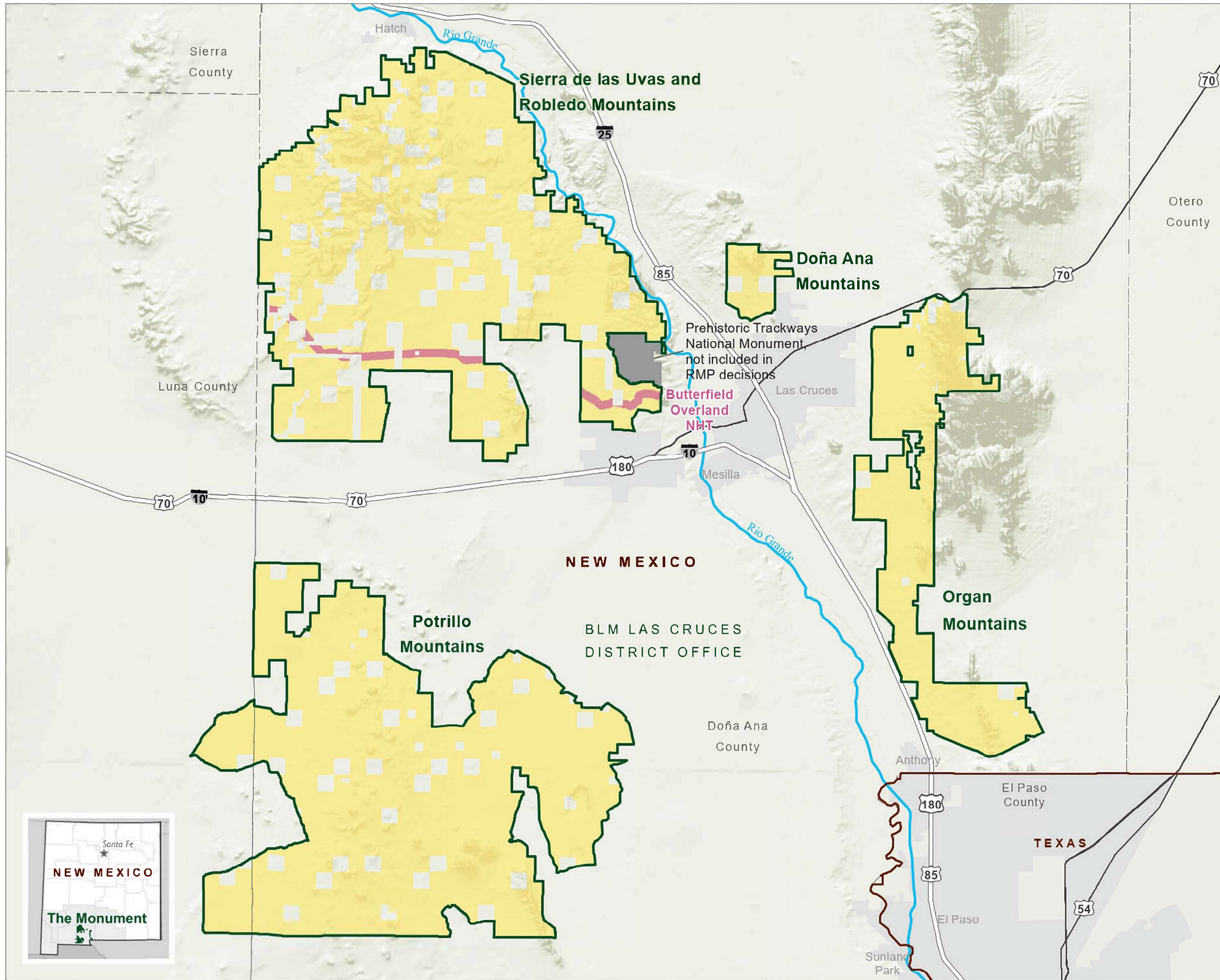
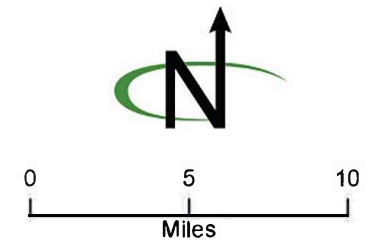


Figure 2-25
Alternatives A, B, C, and D:
Trails

- National historic trail
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument, the planning area



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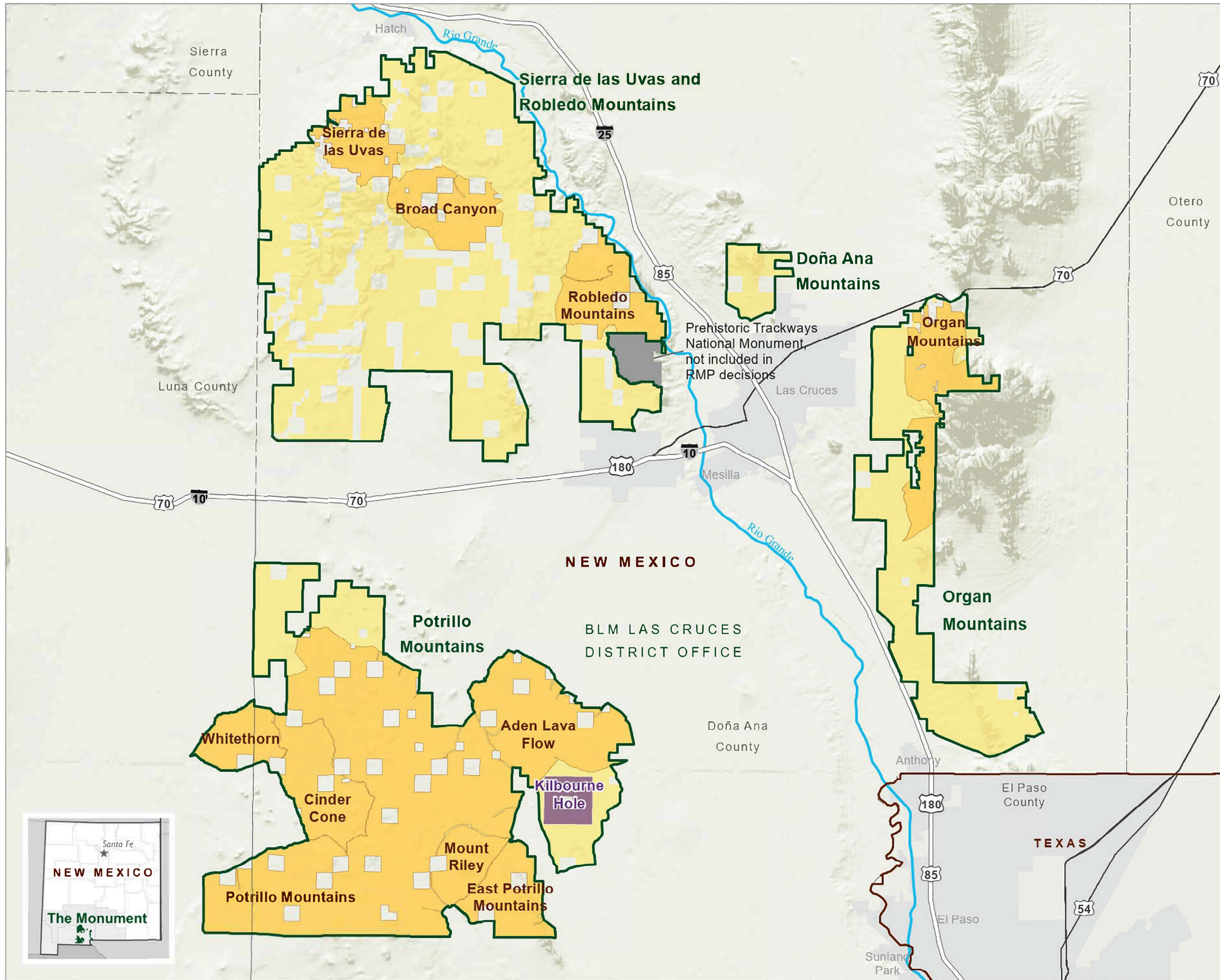
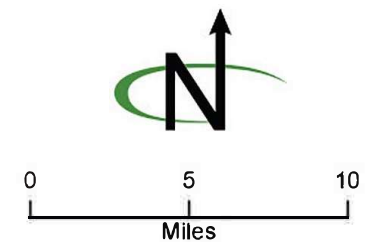


Figure 2-26
Alternatives A, B, C, and D:
Wilderness Areas and National Natural
Landmarks

- National natural landmark
- Wilderness area
- Bureau of Land Management (the surface decision area)
- Organ Mountains-Desert Peaks National Monument, the planning area



Source: BLM GIS 2022
 Department of the Interior, Bureau of Land Management, Las Cruces District Office
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Appendix B

Approach to the Environmental Analysis

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Appendix B. Approach to the Environmental Analysis

B.1 INTRODUCTION

This appendix presents the background for and approach to identifying the environmental, social, and economic impacts on the human and natural environment that are predicted to result from implementing the alternatives presented in **Chapter 2**. The goals, objectives, and management direction described in **Chapter 2** by alternative are plan-level decisions and do not result in direct, on-the-ground changes. Plan-level decisions establish allocations that identify the uses that are allowed, restricted, or prohibited on BLM-administered lands. These allocations set the stage to guide future land management actions and subsequent site-specific or implementation decisions and the corresponding resource use levels.

Based on the allocations in each of the alternatives, the BLM estimated the level of activities that are predicted to occur on an average annual basis on BLM-administered lands. This was done to provide context for the environmental analysis of each of the alternatives. Some estimated use levels are identified in the descriptions of the alternatives while others are estimated based on past activity level. Because the alternatives provide a broad management framework, the exact location, timing, and level of use are not known and cannot be accurately predicted. The actual levels of activities may be more than or less than the levels estimated for analysis purposes; however, the estimated levels allow the BLM to analyze and display the relative differences among the alternatives.

Impact analyses and conclusions are based on interdisciplinary team knowledge of the resources and the planning area, information provided by experts in the BLM, monitoring data and information contained in pertinent literature, and professional judgment. The baseline used for the impact analysis is the current condition or situation, as described in the *Affected Environment* section of **Chapter 3**.

The methodology for the impact assessment conforms to the guidance found in the following sections of the Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA): 40 Code of Federal Regulations (CFR) 1502.24 (Methodology and Scientific Accuracy), 40 CFR 1508.7 (Cumulative Impact), and 40 CFR 1508.8 (Effects). The Council on Environmental Quality regulations require that agencies “rigorously explore and objectively evaluate” the impact of all alternatives.

B.2 DIRECT AND INDIRECT IMPACTS

Direct and indirect impacts are considered in **Chapter 3**:

- **Direct Impacts**—Impacts that are caused by the proposed action and occur at the same time and place.
- **Indirect Impacts**—Impacts that are caused by the proposed action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts are caused by the proposed action, but do not occur at the same time or place as the direct impacts.

Potential impacts are quantified where possible using GIS and other applications; in the absence of quantitative data, best professional judgment prevailed. Impacts are sometimes described using ranges of potential impacts or in qualitative terms. The standard definitions for terms used in the analysis are as follows, unless otherwise stated:

- **Context**—Describes the area or location (site-specific, local, planning area-wide, or regional) in which the potential impact would occur. Site-specific impacts would occur at the location of the action, local impacts would occur in the decision area, planning area-wide impacts would affect most or all of the planning area, and regional impacts would extend beyond the planning area boundaries.
- **Duration**—Describes the length of time an effect would occur, either short term or long term. The temporal scale of effects is defined for each resource in **Section B.4**, below.
- **Intensity**—Impacts are discussed using quantitative data where possible.

B.3 CUMULATIVE IMPACTS

The cumulative impact analysis considers impacts of a proposed action and its alternatives that may not be consequential when considered individually; however, when they are combined with impacts of other actions, they may be consequential.

The purpose of the cumulative impacts analysis is to determine if the impacts of the actions considered in this EIS, together with other past, present, and reasonably foreseeable future actions, could interact or accumulate over time and space, either through repetition or combined with other impacts, and under what circumstances and to what degree they might accumulate.

Because the total effect of any single action cannot be determined by considering it in isolation, the BLM has determined the total effect by considering the likely result of that action in conjunction with many others. These assessments involve determinations that often are complex and, to some degree, subjective.

B.3.1 Method

The method used for cumulative impacts analysis in the OMDPNM RMP/EIS consists of the following steps:

- Identify issues, characteristics, and trends in the affected environment that are relevant to assessing cumulative effects of the action alternatives. This includes discussions on lingering effects from past activities that demonstrate how they have contributed to the baseline condition for each resource. This information is summarized in **Chapter 3**.
- Define the spatial (geographic) and temporal (time) frame for the analysis. This timeframe may vary between resources depending on the historical data available and the relevance of past events to the current baseline.
- Identify past, present, and reasonably foreseeable future actions (RFFAs) from human activities that could have additive or synergistic effects. Summarize past and present actions within the defined temporal and spatial time frames, and identify any RFFAs that could have additive, countervailing, or synergistic effects on identified resources.
- Use a specific method to screen all of the direct and indirect effects, when combined with the effects of external actions, to capture those synergistic and incremental effects that are potentially

cumulative in nature. Both adverse and beneficial effects of external factors are assessed and then evaluated in combination with the direct and indirect effects for each alternative on the various resources to determine if there are cumulative effects.

- Evaluate the impact of the potential cumulative effects and assess the relative contribution of the action alternatives to cumulative effects.
- Discuss rationale for determining the impact rating, citing evidence from the peer-reviewed literature, and quantitative information where available. When confronted with incomplete or unavailable information, ensure compliance with 40 CFR 1502.22.

The analysis also considers the interaction among the impacts of the alternatives with the impacts of various past, present, and RFFAs, as follows:

- Additive—the impacts of actions add together to make up the cumulative impact
- Countervailing—the impacts balance or mitigate the impacts of other actions
- Synergistic—the impact of the actions together is greater than the sum of their individual impacts

In the OMDPNM RMP/EIS, both the temporal and geographic scope of the cumulative impact analysis could vary according to the resource under consideration. Generally, the appropriate timeframe for cumulative impacts analysis is the life of the plan. Climate change may require a larger temporal scale to see measurable changes. The geographic scope generally encompasses the planning area and beyond for some resources (e.g., air resources). Details associated with the impact indicators, geographic scope, and analysis assumptions for each resource are found in **Section B.4**, below.

B.3.2 Past, Present, and Reasonably Foreseeable Future Actions

Relevant past and present actions are those that have influenced the current condition of the resource. For the purposes of this RMP/EIS, past and present actions are human-controlled events. Past actions were identified using agency documentation, NEPA analyses, reports and resource studies, peer-reviewed literature, and best professional judgment.

The term RFFA is used in concert with the CEQ definitions of indirect and cumulative effects, but the term itself is not defined further. Most regulations that refer to “reasonably foreseeable” do not define the meaning of the words, but do provide guidance on the term. Typically, RFFAs are based on such documents as plans, permit applications, and fiscal appropriations. RFFAs considered in the cumulative effects analysis consist of projects, actions, or developments that can be projected, with a reasonable degree of confidence, to occur over the life of the plan.

Table 3-1, in **Chapter 3**, provides a list of the RFFAs that the BLM considered within the cumulative impact analysis.

B.4 RESOURCE METHODOLOGY, INDICATORS, AND ASSUMPTIONS

For organizational purposes, **Chapter 3** is divided into sections by subject area (such as water resources, wildlife, and recreation) from the land use planning handbook, BLM Handbook H-1601-1. Though they are described and analyzed in discrete sections, these subjects are dynamic and interrelated. A change in one resource can have cascading or synergistic impacts on other resources. For example, management direction related to erosion can have an effect on air quality, which in turn can have implications on human outcomes, such as health. As a result, there is some overlap among the resource sections in **Chapter 3**,

and the impacts described in one section may depend on the analysis from another section. During the writing process, resource specialists shared data and discussed interrelated aspects of the analyses to better capture the interrelated nature of environmental resources.

The OMDPNM RMP/EIS uses an issue-based approach to the analysis. This issue-based approach allows the BLM to focus on the actual issues to be analyzed, rather than an encyclopedic look at the affected environment and unaffected resources. Issue statements were developed for each subject area to focus the analysis on how the management direction and allocations for allowable uses described in **Chapter 2** would have the potential to affect resources, resource uses, and the human environment in the Monument. The issue statements, indicators, analysis areas, and assumptions used for each subject topic are detailed below. The impact analyses for direct, indirect, and cumulative impacts for all resources are found in **Chapter 3**.

B.4.1 Fish, Wildlife, and Habitat

Issue 1: How would the quality and quantity of SHSs for general fish and wildlife species be affected by designated areas, recreation areas, motorized use, and ROW allocations?

Methodology

The impact analysis reviews the impacts each proposed alternative would have on standard habitat sites (SHSs) for fish and wildlife. BLM SHSs are an indicator used for fish, wildlife, and habitat to assess habitat quality and to identify and monitor specific issues at the landscape level, rather than on a species-by-species approach. Differences in each alternative have the potential to impact vegetation communities, soils, and other ecosystem components that directly influence SHSs. This analysis uses GIS acreage calculations for the occurrence of each indicator on areas of BLM-administered land intersected with potential BLM management activities under each alternative, including special designations, recreation areas, travel management designations, and ROW allocations. Resource uses could alter habitat suitability for some fish and wildlife, while the establishment of specially designated areas and ROW avoidance and exclusion areas would contribute to the protection of SHSs. The establishment of SRMAs, on the other hand, would protect habitat outside of the designated area by concentrating recreational activities in those areas. Comparisons are made between each alternative and their potential to impact SHSs.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- SHSs that are within designated areas, such as ACECs, SRMAs, or designated wildernesses would have fewer impacts due to certain restrictions, such as limited motorized use. Therefore, these restrictions would reduce impacts on species that use the associated SHS.

- An increase in recreational use or ROW development will increase disturbance to the SHS used by wildlife. Motorized use can impact soils and vegetation and alter habitat characteristics that may influence the suitability for some species

Impact Analysis Indicators

- Overlap of SHSs with designated areas, which would exclude or restrict some resource uses that would impact SHSs and therefore provide protection for these SHSs
- Overlap of SHSs with recreation areas, acres closed to motorized use, or ROW allocations, which could impact the quality or quantity of SHSs

Issue 2: How would disturbance, avoidance, disruption of movement patterns, injury, and mortality directly impact general wildlife species under each alternative?

Methodology

The analysis reviews the impacts each proposed alternative would have on fish and wildlife. BLM SHSs are an indicator used for fish, wildlife, and habitat to assess habitat quality and to identify and monitor specific issues at the landscape level, rather than on a species-by-species approach. The SHSs are used as a proxy for impacts on wildlife. Differences in each alternative have the potential to impact individual species and populations. Comparisons are made between each alternative and their potential to impact wildlife species.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Protections for other resources often have an incidental beneficial impact of protecting wildlife. Designated areas such as ACECs, SRMAs, or wilderness areas restrict certain activities, such as recreational use and ROW developments, that directly impact wildlife.
- Impacts on wildlife from displacement depend on the location, extent, timing, or intensity of the disruptive activity. Furthermore, impacts from displacement would be greater for wildlife species that have limited habitat or a low tolerance for disruption and disturbance.
- The establishment of nonnative, invasive grasses has a negative impact on native plant and animal species. Specifically, the establishment of nonnative grasses can increase the intensity and frequency of wildfires that can impact native vegetation and endemic wildlife species.
- Disturbances to wildlife and avoidance of areas would be detrimental. An increase in recreational use or ROW allocations will increase disturbance and avoidance of areas by wildlife. Avoidance of areas important to wildlife for life cycles, such as foraging, reproduction, and rearing areas, can cause individuals to forgo reproduction; cause individuals to avoid foraging, which can influence health; and impact the survival of offspring that may be more sensitive to impacts. Certain species are more vulnerable than others to human activities. Species are more sensitive to disturbances

at certain times of the year (for example, during nesting, brooding, and rearing). Certain activities, such as motorized use, can impact species more than others. This is due to an increase in the associated noise and vehicles moving at high speeds that may, for instance, cause a flight response (Pagany 2020).

Impact Analysis Indicators

- Overlap of SHSs with specially designated areas that would provide protection for species that use these habitats.
- Overlap of recreational areas and ROW allocations with SHSs. These activities have the potential to impact wildlife species

B.4.2 Special Status Species

Issue 1: How would the quality and quantity of habitat for special status species be affected by special designations, recreation areas, motorized use, and ROW allocations within vegetation communities?

Methodology

The analysis reviews the impacts each proposed alternative would have on special status species and their associated habitats. Because habitats for special status species have not been mapped throughout the Monument, general vegetation communities are cross referenced with special status species habitat requirements to analyze impacts on the habitats and species.

Differences between the alternatives have the potential to impact these vegetation communities, soils, and other ecosystem components that directly influence special status species habitats. This analysis uses GIS acreage calculations for vegetation communities intersected with potential BLM management activities under each alternative, including special designations, recreation areas, travel management designations, and ROW allocations. The establishment of specially designated areas and ROW avoidance and exclusion areas would contribute to the protection of habitats; this is because these areas contain specific restrictions on the timing, duration, and extent that activities can occur. The establishment of SRMAs, on the other hand, would protect habitat outside of the designated area by concentrating recreational activities in those areas. Comparisons are made between each alternative and their potential to impact vegetation communities as a proxy for impacts on special status species and their habitats.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Protections for other resources often have an incidental beneficial impact of protecting special status species habitat. Designated areas, such as ACECs, SRMAs, or wilderness areas, restrict certain activities, such as recreational use and ROW developments, that directly impact wildlife.
- Impacts on special status wildlife from displacement depend on the location, extent, timing, or intensity of the disruptive activity. Furthermore, impacts from displacement would be greater for special status species that have limited habitat or a low tolerance for disruption and disturbance.
- Disturbances to special status species and habitat avoidance would be detrimental. An increase in recreational use or ROW allocations would increase disturbance and habitat avoidance. Certain species are more vulnerable than others to human activities. Species are more sensitive to disturbances at certain times of the year (for example, nesting, brooding, and rearing or the flowering period for annual forbs). Certain activities, such as motorized use, can impact species more than others. This is due to an increase in the associated noise and vehicles moving at higher speeds.
- Although grazing may impact SHSs, acres available to livestock grazing do not vary by alternative. However, recreational activities would continue to occur throughout the Monument. Therefore, recreational activities and the establishment of designated areas would have a greater impact on SHSs; therefore, recreation is analyzed in detail.

Impact Analysis Indicators

- Overlap of vegetation communities with specially designated areas that would provide protection for special status species that use these habitats
- Overlap of recreation areas, acres closed to motorized use, and ROW allocations with vegetation communities that could impact the quality or quantity of habitats

Issue 2: How would disturbance, avoidance, disruption of movement patterns, injury, and mortality directly impact special status species?

Methodology

The analysis reviews the impacts each proposed alternative would have on special status species. Because comprehensive special status species' occupancy data are not available, habitat requirements of special status species are used to determine potential presence. Differences in each alternative have the potential to impact individual species and populations. Comparisons are made between each alternative and their potential to impact special status species.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Protections for other resources often have an incidental beneficial impact of protecting special status species' habitat. Designated areas, such as ACECs, SRMAs, or wilderness areas, restrict certain activities, such as recreational use and ROW developments, that directly impact special status species.
- Impacts on wildlife from displacement depend on the location, extent, timing, or intensity of the disruptive activity. Furthermore, impacts from displacement would be greater for wildlife species that have limited habitat or a low tolerance for disruption and disturbance.
- Disturbances to wildlife and avoidance of areas would be detrimental. An increase in recreational use or ROW allocations would increase disturbance and avoidance of areas by wildlife. Certain species are more vulnerable than others to human activities. Species are more sensitive to disturbances at certain times of the year (for example, nesting, brooding, and rearing). Certain activities, such as motorized use, can impact species more than others. This is due to an increase in the associated noise and vehicles moving at higher speeds (Pagany 2020).
- Although grazing may impact SHS, recreational activities and the establishment of designated areas would have a greater impact on SHS and are therefore analyzed in detail.

Impact Analysis Indicators

- Overlap of vegetation communities with specially designated areas that would provide protection for special status species that use these habitats
- Overlap of recreational areas and ROW allocations with vegetation communities. These activities have the potential to impact special status species

B.4.3 Vegetation Communities***Issue 1: How would the potential for ground disturbance or the potential increase in vectors for invasive weed spread be affected under the range of alternatives?****Methodology*

The analysis reviews the impacts each proposed alternative would have on the introduction and spread of noxious and invasive plant species. The evaluation of noxious and invasive weed effects on various resources is based largely on the potential for weed spread. Weed spread is often influenced by the extent of disturbed soil and the proximity of established weed infestation to areas of disturbance. Assessing weed spread is based, in part, on evaluating the difference in frequency, intensity, or type of management activity or natural processes that result in significant soil disturbance. In addition, the mechanism for the transport of weed seed is termed a "vector." Vectors for weed spread include equipment, vehicles, animals, people, wind, and water. Vectors associated with, or resulting from, future management activities in the Monument may affect various resources by aiding in the spread of weeds. Comparisons are made between alternatives based on their potential to cause ground disturbance or increase vectors for weed spread.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The BLM assumes that the establishment of new undocumented weed infestations has likely occurred and would continue to occur over the life of the plan; this is not reflected in the affected environment description for invasive plant infestations.
- Across all alternatives, noxious and invasive plant species would likely remain present in the Monument to varying extents.

Impact Analysis Indicators

- Potential for ground disturbance or an increase in vectors for weed spread

Issue 2: How would vegetation communities at low elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, grazing, and ROW allocations?

Issue 3: How would vegetation communities at intermediate or high elevations be affected by vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, grazing, and ROW allocations?

Methodology

The analysis reviews the impacts each proposed alternative would have on vegetation communities in the Monument. Comparisons are made between alternatives and the baseline based on their relative effect on the vegetation communities. Differences among the alternatives may be expressed both qualitatively and quantitatively. For each alternative, the acres of plan components that change by alternative (for example, ROW allocations) were overlaid with mapped vegetation types to present a quantitative analysis.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Terrestrial ecosystems are complex and contain many known and unknown factors that interact with each other, often in unpredictable ways. There are gaps in available information about ecological functioning. Vegetation is dynamic and changing constantly; the BLM's ability to predict changes in the future is limited. The level of uncertainty depends on how predictable such factors as disturbances, climate change, or human activities may be.
- Assuming best management practices are followed, the BLM expects that the long-term ecological condition and function would improve as the result of vegetation management activities, although

there may be some temporary impairment (for example, soil disturbance and runoff) in the short term.

Impact Analysis Indicators

- The indicator of impacts on vegetation is the acres of vegetation communities open to potential vegetation-disturbing activities due to management decisions related to motorized and mechanized vehicles, special designations, recreation, and ROW allocations

B.4.4 Wildland Fire Ecology and Management

Issue 1: How would the number of ignitions that require fire suppression affect fire resiliency and fire risks in the Monument?

Methodology

A qualitative approach was used to analyze impacts on wildland fire, based on an understanding of the current conditions in the decision area. A quantitative approach was not undertaken, given the uncertainty in the exact location and number of acres that would be impacted by proposed management. Impacts on wildland fire management generally result from activities that affect fire intensity, frequency, and suppression efforts. Indirect impacts tend to occur over the long term and involve changes to vegetation structure that in turn impact wildfire size, frequency, severity, intensity, and management. The best available scientific literature and GIS data were reviewed and analyzed to summarize this section.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area) and the wildland-urban interface surrounding the Monument
- Cumulative
 - All lands within the Monument boundary (planning area) and the wildland-urban interface surrounding the Monument

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- A direct relationship exists between fuel loading and potential fire intensity and severity.
- Management under all alternatives would not directly change the sources of wildfire ignitions.

Impact Analysis Indicator

- Number of ignitions that require suppression

B.4.5 Geological Resources

Issue 1: How would recreation uses and increased visitor use affect unique geologic features?

Methodology

The analysis uses GIS data for areas limited to designated roads in the Monument overall and the Kilbourne Hole NNL to compare potential disturbance from OHV use under each alternative. Impacts from recreational shooting are estimated based on whether the use is restricted. Disturbance from recreation

uses and increased visitor use over the life of the plan that results in erosion or damage to unique geologic features would be permanent.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- More unique geologic features likely exist in the planning area than are currently inventoried.
- Geologic features are subjective to visitor opinion (researcher versus the casual visitor).
- Impacts on geologic resources would be minimal because the decision area is closed to future mineral development.
- Increased awareness of geologic resources in the decision area may increase public interest and visitation to unique geologic features.

Impact Analysis Indicators

- Presence of unique geologic features

Issue 2: How would unique geologic features be affected by road and trail maintenance?

Methodology

The methodology is a qualitative analysis of road and trail maintenance that could occur within or near areas with unique geologic features in the decision area. Disturbance from construction of new routes or trails over the life of the plan that causes damage to unique geologic features would be permanent.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- More unique geologic features likely exist in the planning area than are currently inventoried.
- Geologic features are subjective to visitor opinion (researcher versus the casual visitor).
- Impacts on geologic resources would be minimal because the decision area is closed to future mineral development.

Impact Analysis Indicators

- Presence of unique geologic features

B.4.6 Paleontological Resources

Issue 1: How would the loss or removal of scientifically important fossils—without formally studying them—and areas with more intensive visitor use impact sensitive paleontological resources?

Methodology

In analyzing the impact of proposed management actions on paleontological resources, the best available scientific literature and GIS data were reviewed, and the potential impacts under the four alternatives (Alternatives A through D) were compared. The project area described in this section is the decision area (BLM-administered lands).

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- More unique paleontological features likely exist in the planning area than are currently inventoried.
- Impacts on paleontological resources from mineral development would be negated because the decision area is closed to future mineral development.
- Increased awareness of paleontological resources in the decision area may increase public interest and visitation to unique geologic features. This may help foster stewardship of important paleontological resources. It also may invite illegal fossil collection.
- Current recreation and demand in the planning area will continue and are likely to increase.

Impact Analysis Indicators

- Loss or removal of scientifically important fossils without formal study
- Acres of PFYC values 4–5 that may be present where more intensive visitor use is anticipated

B.4.7 Soil Resources

Issue 1: How would livestock grazing, rangeland improvements, and recreation impact soil stability and productivity?

Methodology

The analysis uses GIS data for the indicators to compare their acreages in areas limited to designated roads and in areas closed to motorized OHV travel in the decision area. Since the BLM does not have comprehensive data for the biological soil crust distribution in the decision area, the indicator for this

resource is considered qualitatively to analyze potential impacts on biological soil crusts, wherever they may occur. Impacts from livestock and rangeland improvements are analyzed qualitatively.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Soil erosion that results from recreation uses, livestock and rangeland improvements, and increased visitor use over the life of the plan would be permanent. Short-term impacts are those that generally occur within 5 years of recreational use or livestock management implementation.

Impact Analysis Assumptions

- As the slope increases, the potential for erosion increases and the risk of soil instability following disturbance increases, particularly if the cover, structure, or permeability has been altered (NRCS 2001).
- Soils with high runoff potential and in hydrologic groups C and D, soils with high silt content, and soils on slopes greater than 10 percent would be the most vulnerable to erosion from surface disturbance.
- Reclamation activities would coincide with best management practices and would depend on soil resiliency, which is the soil's inherent ability to recover from impacts. In cases where soil is completely lost, soil reclamation would not be possible.

Impact Analysis Indicators

- Soils susceptible to erosion, which include the following:
 - Slopes greater than 10 percent
 - Soils with high or very high runoff potential
 - Soils in hydrologic groups C or D
 - Soils with silt content greater than 30 percent
- Presence of biological soil crust

Issue 2: How would prescribed fires and vegetation treatments affect soil stability and productivity?

Methodology

The methodology is a qualitative analysis of vegetation treatments and prescribed fire that could occur within or near the soil indicators.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)

- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Short-term impacts include those that generally occur within 5 years of implementing vegetation treatments and prescribed fire management. Long-term impacts occur over the life of the plan.

Impact Analysis Assumptions

- As the slope increases, the potential for erosion increases and the risk of soil instability following disturbance increases, particularly if the cover, structure, or permeability has been altered (NRCS 2001).
- Soils with high runoff potential and in hydrologic groups C and D, soils with high silt content, and soils on slopes greater than 10 percent would be the most vulnerable to erosion from surface disturbance.
- Reclamation activities would coincide with best management practices and would depend on soil resiliency, which is the soil's inherent ability to recover from impacts. In cases where soil is completely lost, soil reclamation would not be possible.

Impact Analysis Indicators

- Soils susceptible to erosion, which include the following:
 - Slopes greater than 10 percent
 - Soils with high or very high runoff potential
 - Soils in hydrologic groups C or D
 - Soils with silt content greater than 30 percent
- Presence of biological soil crust

B.4.8 Cave and Karst Resources

Issue 1: How would cave ecosystems, cave resources, and cave-dependent species be affected by travel management, recreation, and development resulting from the proposed management changes?

Methodology

Much of the damage to caves, cave ecosystems, and cave-dependent species is caused by vandalism, fires, and other impacts associated with cave visitation. These impacts disturb cave-dependent species, harm air and water quality, and disrupt the ecosystem within caves. Any management decisions that would reduce the number of visitors entering caves would result in a reduction in these impacts.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Reducing the ease of access by closing areas of the Monument to OHVs and mechanized use, as well as closing and rehabilitating unneeded roads, would reduce visitation of some caves; this would result in less damage to cave ecosystems and cave-dependent species.
- Closing caves to non-permitted use would be enforced with a physical barrier, such as bat-friendly gates.

Impact Analysis Indicators

- Acres closed to OHV or mechanized travel
- Travel management goals or guidance to close and rehabilitate unneeded roads
- Direction or actions that would prevent or reduce cave visitation and use

Issue 2: How would the probability for caves to be surveyed for potential listing as significant under the Federal Cave Resources Protection Act change under the range of alternatives?

Methodology

The analysis evaluates how management direction would improve information about cave resources, accelerate the surveying process, or otherwise result in some caves being surveyed for potential listing as significant under the Federal Cave Resources Protection Act.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The Monument has sufficient budget and staff available to carry out cave-related management direction.

Impact Analysis Indicators

- Direction or actions in the Monument plan that would result in cave surveys or otherwise increase knowledge about cave resources in the Monument
- Direction or actions that would protect potentially significant cave resources until a cave survey for potential listing as a significant cave can be completed

Issue 3: Would proposed management activities change the level of impacts on karst areas from development?

Methodology

The analysis qualitatively assesses how potential infrastructure development in known karst areas could result in impacts on karst features.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Placement of new roads, buildings, or other infrastructure in karst areas could impact karst formations or features by direct physical impacts or as a result of changes in drainage patterns, resulting in dissolution of soluble minerals in these areas.

Impact Analysis Indicators

- The amount of proposed infrastructure development in karst areas that would result in direct physical impacts on karst formations or that would cause changes in drainage patterns, which would result in damage or dissolution of areas of karst formations.

B.4.9 Water Resources

Issue 1: How would management of livestock grazing under the alternatives impact water quality, streambanks, and floodplains?

Methodology

This analysis uses GIS acreage calculations for the occurrence of each indicator on areas of BLM-administered lands intersected with potential BLM management activities under each alternative.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - BLM-administered lands in the planning area as well as 8-digit HUC watersheds that capture all waterbodies flowing into and out of the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impact Analysis Indicators

- Miles of intermittent streams and ephemeral drainages in areas available to livestock grazing
- Acres of waterbodies in areas available to livestock grazing
- Number of seeps and springs in areas available to livestock grazing
- Number of groundwater wells in areas available to livestock grazing

Issue 2: How would management of recreation, transportation, and access under the alternatives impact water quality, floodplains, and natural drainage patterns?

Methodology

This analysis uses GIS acreage calculations for the occurrence of each indicator on areas of BLM-administered lands intersected with potential BLM management activities under each alternative.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - BLM-administered lands in the planning area as well as 8-digit HUC watersheds that capture all waterbodies flowing into and out of the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impact Analysis Indicators

- Miles of intermittent streams and ephemeral drainages in areas open to OHV travel and within SRMAs
- Acres of waterbodies in areas open to OHV travel and within SRMAs

- Number of seeps and springs in areas open to OHV travel and within SRMAs
- Number of groundwater wells in areas open to OHV travel and within SRMAs

Issue 3: How would special designations under the alternatives protect water resources from management activities?

Methodology

This analysis uses GIS acreage calculations for the occurrence of each indicator on areas of BLM-administered lands intersected with potential BLM management activities under each alternative.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - BLM-administered lands in the planning area as well as 8-digit HUC watersheds that capture all waterbodies flowing into and out of the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impact Analysis Indicators

- Miles of intermittent streams and ephemeral drainages in areas with special designations
- Acres of waterbodies in areas with special designations
- Number of seeps and springs in areas with special designations
- Number of groundwater wells in areas with special designations

Issue 4: How would vegetation management, active fuels treatments, and reducing wildfire risk impact water quality, floodplains, and natural drainage patterns?

Methodology

This analysis uses GIS acreage calculations for the occurrence of each indicator on areas of BLM-administered lands intersected with potential BLM management activities under each alternative.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)

- Cumulative
 - BLM-administered lands in the planning area as well as 8-digit HUC watersheds that capture all waterbodies flowing into and out of the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- This document includes planning-level management; therefore, there would be no direct impacts on water resources. Specific impacts relating to water resources, quality, and quantity will vary by project. Site-specific NEPA analyses would be applied prior to land use activities, to avoid adverse impacts on water resources.
- Potential impacts are likely to be minimal and concentrated to specific project areas; the potential impacts that could degrade water resources will be mitigated through best management practices.

Impact Analysis Indicators

- Changes in vegetation management and fuels treatments that could influence water quality, floodplains, and natural drainage pattern

B.4.10 Air Quality and Climate

Issue 1: How would the proposed management actions affect PM_{2.5}, PM₁₀, and expected visibility?

Methodology

Impacts on air quality from PM_{2.5} and PM₁₀ emissions are determined based on a quantitative assessment of emissions and a qualitative analysis of the effects of these emissions on air quality, deposition, and visibility.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area) and areas within approximately 62 miles of the planning area boundary
- Cumulative
 - All lands within the Monument boundary (planning area) and areas within approximately 62 miles of the planning area boundary

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- There would be no development of the valid existing geothermal leases given the lack of historic activity. In addition, there would be no new mineral-related development because the decision area would remain closed to mining.

- Estimates of air emissions are based on recreational use of all-terrain vehicles (18,486,303 miles per year) and off-road motorcycles (1,387,047 miles per year), as well as off-road equipment use (3,500 miles per year and 408 hours) for road maintenance (Grant et al. 2022).
- Emissions from prescribed fires are based on acres burned from three fires (525 acres per year) and associated vehicle (248 miles per year) and off-road equipment use (192 hours) (Grant et al. 2022).
- Emissions from grazing activities are based on 92,446 AUMs for cattle and 493 AUMs for horses with 3,565 miles per year of vehicle travel and 150 hours of off-road equipment use for fence, pipeline, and reservoir maintenance (Grant et al. 2022)

Impact Analysis Indicators

- Tons of particulate matter emissions based on miles traveled by on-road motorized vehicles
- Tons of particulate matter emissions from prescribed fires based on annual acres burned
- Tons of particulate matter emissions from non-road equipment used for livestock grazing, vegetation treatments, and travel management (road maintenance) based on the types and numbers of equipment and estimated hours of operation
- Tons of fugitive dust emissions based on surface area of exposed unpaved roads and trails

Issue 2: How would BLM management activities and allocations for allowable uses contribute to greenhouse gas emissions in the Monument?

Methodology

Major BLM-authorized activities within the Monument that have the potential to impact greenhouse gas concentrations include livestock grazing operations, travel and transportation management, and prescribed fire activities. The impact analysis is based on a quantitative assessment of greenhouse gas emissions from these activities and a qualitative analysis of the effects of these emissions on climate change.

Impact Analysis Area

- Because climate change is a global issue, the cumulative analysis area for greenhouse gases cannot be restricted to one region. For the purposes of the RMP/EIS, the greenhouse gases/climate change analysis area is focused on New Mexico and the United States, but worldwide data are also used

Impact Analysis Temporal Scale

- The temporal scale is both 20 years and 100 years to represent the differing effects from shorter- and longer-lived greenhouse gases based on their 20-year and 100-year global warming potentials

Impact Analysis Assumptions

- There would be no development of the valid existing geothermal leases given the lack of historic activity. In addition, there would be no new mineral-related development because the decision area would remain closed to mining.
- Estimates of air emissions are based on recreational use of all-terrain vehicles (18,486,303 miles per year) and off-road motorcycles (1,387,047 miles per year), as well as off-road equipment use (3,500 miles per year and 408 hours) for road maintenance (Grant et al. 2022).

- Emissions from prescribed fires are based on acres burned from three fires (525 acres per year) and associated vehicle (248 miles per year) and off-road equipment use (192 hours) (Grant et al. 2022).
- Emissions from grazing activities are based on 92,446 AUMs for cattle and 493 AUMs for horses with 3,565 miles per year of vehicle travel and 150 hours of off-road equipment use for fence, pipeline, and reservoir maintenance (Grant et al. 2022)

Impact Analysis Indicators

- Metric tons of carbon dioxide, methane, and nitrous oxide emissions and their carbon dioxide equivalencies from on-road equipment based on estimated vehicle miles traveled
- Metric tons of carbon dioxide, methane, and nitrous oxide emissions and their carbon dioxide equivalencies from prescribed fire based on annual acres burned
- Metric tons of methane emissions from livestock based on the number of AUMs
- Metric tons of carbon dioxide, methane, and nitrous oxide emissions and their carbon dioxide equivalencies from non-road equipment used based on the types and numbers of equipment and estimated hours of operation

B.4.11 Cultural Resources

Issue 1: How would the integrity of known and unknown cultural resources be affected by ground disturbance and increased use and access?

Methodology

In analyzing the impact of proposed management directions on the integrity of known and unrecorded cultural resources, the best available scientific literature and GIS data were reviewed, and the potential impacts on resource integrity under the four alternatives (Alternatives A through D) were compared.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The BLM will follow existing regulatory procedures for the consideration of impacts on cultural resources (for example, Section 106 of the National Historic Preservation Act or BLM and New Mexico State Historic Preservation Office agreement protocols).
- Sites are nonrenewable resources, and damage to them typically results in permanent impacts.
- Many more sites and resources exist in the Monument than are currently inventoried; this includes traditional cultural properties and other data sets outside existing inventoried cultural data, including but not limited to, knowledge of sites from communities in the planning area.

- Where cultural resource surveys have not been conducted, the BLM assumes sites exist across the planning area. This analysis does not involve a site-specific impact analysis; it only quantifies known sites in an area to demonstrate current knowledge of site location and distribution.
- Areas of high potential for cultural resource site locations have not been modeled.
- Many sites are likely significant for regional and national history, including precontact sites; however, they have never been evaluated for listing on the National Register of Historic Places.
- This analysis assumes all sites are eligible until evaluated, and they are subject to the impacts discussed.
- Current recreation and demand in the planning area will continue and are likely to increase.

Impact Analysis Indicators

- Potential for adverse effects on cultural resources through ground disturbance or alterations of the setting
- Potential for increased use or access, resulting in inadvertent incremental damage, casual collection of artifacts, or vandalism

B.4.12 Visual Resources

Issue 1: How would visual resource management class allocations affect visual values (including scenic quality) on BLM-administered lands?

Methodology

The BLM uses visual resource inventory (VRI) classes to identify the relative importance of different landscapes in the area. Potential impacts on visual resources are assessed by comparing the VRI class to the Visual Resource Management (VRM) class assigned for an area for each alternative.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - BLM-administered lands within the Monument boundary (the decision area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Activities that cause the most contrast and are the most noticeable to the viewer will have the greatest impact on visual values.
- As the acreage of disturbance increases, the degree of visual contrast may also increase.
- The more protection that is associated with the management of other resources and special designations, the greater the benefit to visual resources.
- Best management practices and project design, avoidance, or mitigation can reduce, but not entirely prevent, impacts on visual resources.

- The BLM VRM system's visual resource contrast rating process (BLM Handbook H-8431-1) will be used for site-specific actions. This would not apply to the no action alternative.

Impact Analysis Indicators

- VRM class designation in comparison with VRI class

B.4.13 Livestock Grazing

Issue 1: How would proposed management activities impact the number of allotments available for livestock grazing, the associated acres of BLM-administered lands, and the AUMs of forage allocated for livestock grazing?

Methodology

The best available scientific literature and GIS data were reviewed and analyzed to summarize the following section. The project area described in this section is the area within the Monument and the allotment areas that overlap it. The analysis covers from the time of the RMP's implementation through the life of the plan.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area) and the allotments that overlap with it

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- With proper management, the impacts of livestock grazing are insignificant in comparison to the natural resilience of ecosystems. Thus, for the purpose of this analysis, livestock grazing is not considered a surface-disturbing activity.
- Livestock will be managed so that range conditions move toward desired conditions.
- Grazing allotments will remain open, if there continues to be demand. If a permittee is willing to relinquish their grazing preference for an allotment, the allotment could move to vacant status, and the permit could be terminated. The decision to change the existing status of an allotment and terminate a permit may be based on the demand for permitted use and utilization of forage or the dedication of the land to another purpose.
- There may be minor, but acceptable, discrepancies between the actual acres of allotments in the Monument and the GIS layers used to determine the extent of those allotments.
- Unauthorized use of rangeland will be minimal to nonexistent.
- Surface-disturbing activities for campgrounds and recreation sites would remove all vegetation for grazing.

- The BLM assumes it would take approximately two growing seasons after a prescribed burn for vegetation to rehabilitate to a level that grazing could be started again. Monitoring would determine the time frame.

Impact Analysis Indicators

- Acres available for livestock grazing
- Change in surface disturbance and available forage

B.4.14 Recreation

Issue 1: How would the quality, types, and levels of recreation opportunities be affected by changes in OHV allocations, SRMA designations, and recreational shooting areas?

Methodology

Changes in recreation opportunities and quality are measured by the changes in acres closed to motorized travel, acres and management of SRMAs, recreational shooting opportunities, and management of camping. Changes in the quality, types, and levels of recreation and overall recreation opportunities, as well as conflicts between uses, will vary by alternative. The spatial analysis area is the decision area. The analysis is for a 20-year time frame or the life of the RMP.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Current recreation and demand in the planning area will continue and is likely to increase. Technological advancements may introduce new types of recreational activities.
- The potential for user interactions between all types of users will increase with increasing use.
- Demand for all types of recreation will increase, regardless of whether the activity is permitted.
- Increasing access to BLM-administered lands may increase recreational demand in some areas, while also decreasing demand in other areas by dispersing recreation throughout the decision area.
- Revenue generated from recreation will continue to increase in the future.
- Recreation will increase in areas where additional OHV use is allowed.

Impact Analysis Indicators

- Acres closed to motorized or mechanized travel
- Acres of SRMAs

- Acres where recreational shooting is prohibited
- Areas where camping is prohibited or limited

B.4.15 Lands and Realty

Issue 1: What would be the impact on ROWs, ROW exclusion and avoidance areas, and areas available for acquisition, retention, and disposal in the Monument?

Methodology

The BLM identified the number of acres in each alternative that would be open and closed to ROWs and land use authorizations, ROW exclusion areas, and ROW avoidance areas, and land available for acquisition, retention, and disposal within the decision area. The BLM then considered how these designations would affect the availability of ROWs and land use authorizations on BLM-administered lands in the decision area.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The demand for new ROWs and other land use authorizations will remain stable or increase slightly throughout the life of the RMP.
- Expanding uses adjacent to BLM-administered lands or on private inholdings within the BLM-administered lands, particularly residential and commercial development, increase the demand for ROWs on BLM-administered lands to accommodate those uses.
- Land tenure adjustments, including acquisition of inholdings and land exchanges, improve land efficiency by acquiring lands to consolidate federal ownership, providing connectivity of important resource values, and adjusting ownership patterns in a manner that furthers the Monument's protective purposes.
- Per the Proclamation, the BLM would continue to prohibit new ROW authorizations in the decision area during the life of the plan, including for wind and solar energy ROWs. Localized renewable energy development could occur in the planning area, but it would not be on BLM-administered lands. Therefore, it would not require BLM ROW authorization.

Impact Analysis Indicators

- Acres open to ROWs
- Acres of land identified for ROW exclusion and avoidance
- Acres available for acquisition, retention, and disposal

B.4.16 Transportation and Access

Issue 1: How would changes in OHV travel designations and routes outside of and inside special designations impact transportation use and access in the Monument?

Methodology

Where possible, this analysis uses quantitative data to describe effects on transportation and access from other resources and resource use programs. This analysis uses GIS acreage calculations for the occurrence of each indicator (where quantifiable) on areas of BLM-administered land. When acres could not be determined, a qualitative approach was used. Qualitative information is also used to support quantitatively based analysis or where numerical data do not exist.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Those seeking access in the decision area have different and potentially conflicting ideas of what should constitute public access on public lands.
- Area designations will remain the same for the life of the RMP.
- Transportation and access will increase in areas where additional OHV use is allowed.

Impact Analysis Indicators

- Acres of OHV travel designations
- Miles of OHV travel routes
- Acres of OHV travel designations in areas with special designations
- Areas to be acquired and the level of existing access to OHV routes in those areas

B.4.17 Special Designations

Issue 1: How would proposed management impact the relevant and important values identified for existing and proposed ACECs?

Methodology

Under alternatives where ACECs are proposed for designation, special management for ACECs would provide a more focused approach to protecting relevant and important values. Under alternatives where ACECs are not proposed for designation, protection of relevant and important values would rely on the overall management identified in Proclamation 9131 and on specific management actions under other resources or resource uses. Because it is assumed that designation of an ACEC includes management actions to protect its relevant and important values, the analysis focuses on alternatives in which an existing or proposed ACEC is not designated to examine how the relevant and important values would be affected.

Impact Analysis Area

- Direct/Indirect
 - ACEC areas within the Monument boundary (the decision area) by alternative
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Excluding feral animals from ACECs would involve fencing; fencing would avoid resources that ACECs are designated to protect.
- Although management actions for most resources and resource uses could have decision area-wide application, ACEC management prescriptions apply only to those lands in each specific ACEC.
- Permitted activities are assumed to have mitigations proposed so as not to impair the relevant and important values for which an ACEC is designated.

Impact Analysis Indicators

- Acreages of designated and undesignated ACECs
- 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 1988)

Issue 2: How would proposed management impact the viewshed of the Butterfield Overland NHT?

Methodology

Impacts on the Butterfield NHT from proposed management actions on other resources and resource uses are based on interdisciplinary team knowledge of the planning area and review of literature. Qualitative effects are presented based on professional judgment.

Impact Analysis Area

- Direct/Indirect
 - The analysis area for the viewshed of the Butterfield Overland NHT includes the trail corridor on BLM-administered lands within the planning area
- Cumulative
 - The analysis area for the viewshed of the Butterfield Overland NHT includes the trail corridor on BLM-administered lands within the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The BLM would follow the guidance in BLM Manual 6250—National Scenic and Historic Trail Administration (BLM 2012) when addressing federal undertakings; therefore, adverse effects on the trail would be appropriately mitigated.

Impact Analysis Indicators

- Acreage of the trail corridor and trail length
- Impact of management activities on the trail corridor’s viewshed and historic values

Issue 3: How would proposed management impact the viewshed of the El Camino Real de Tierra Adentro NHT?

Methodology

Impacts on the El Camino Real de Tierra Adentro NHT from proposed management actions on other resources and resource uses are based on interdisciplinary team knowledge of the planning area and review of literature. Qualitative effects are presented based on professional judgment.

Impact Analysis Area

- Direct/Indirect
 - The analysis area for the El Camino Real de Tierra Adentro NHT includes the overlapping viewshed of the trail within the planning area
- Cumulative
 - The analysis area for the El Camino Real de Tierra Adentro NHT includes the overlapping viewshed of the trail within the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The BLM would follow the guidance in BLM Manual 6280—Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (BLM 2012d) when addressing federal undertakings; therefore, adverse effects on the trail would be appropriately mitigated.

Impact Analysis Indicators

- Changes to the trail corridor’s viewshed and historic values

Issue 4: How would proposed management impact the biological, scenic, geologic, and research values of the Aden Lava Flow RNA?

Methodology

Impacts on the Aden Lava Flow RNA from proposed management actions on other resources and resource uses are based on interdisciplinary team knowledge of the planning area and review of literature. Qualitative effects are presented based on professional judgment.

Impact Analysis Area

- Direct/Indirect
 - Acreage of the designated RNA within the planning area
- Cumulative
 - Acreage of the designated RNA within the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- Although management actions for most resources and uses have Monument-wide application, RNA management prescriptions would apply only to those lands within each specific RNA.

Impact Analysis Indicators

- Acreages of designated RNAs
- The impact of management activities on the quality of biological, scenic, geologic, and research values of the RNA

Issue 5: How would proposed management impact the geologic, scenic, and research values of the Kilbourne Hole NNL?

Methodology

Impacts on the Aden Lava Flow RNA from proposed management actions on other resources and resource uses are based on interdisciplinary team knowledge of the planning area and review of literature. Qualitative effects are presented based on professional judgment.

Impact Analysis Area

- Direct/Indirect
 - Acreage of designated NNL within the planning area
- Cumulative
 - Acreage of designated NNL within the planning area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The BLM would need administrative or implementation-level actions to reduce the effects of vandalism. Because access would not be significantly restricted under any alternative, vandalism could still occur.

Impact Analysis Indicators

- Acreages of designated NNL
- Impact of management activities on the quality of the geologic, scenic, and research values

B.4.18 Tribal Interests

Issue 1: How would changes in visual resources, changes in ground-disturbing activities, and increases in allowable activities or visitation impact areas and resources of Tribal importance, such as cultural and sacred sites, traditional cultural properties, and significant plant communities?

Methodology

Effects on Tribal interests are known through direct Tribal consultation between the BLM and affected Tribes. In analyzing the impact of proposed management directions on areas of Tribal importance, the best available scientific literature and GIS data for the four alternatives (Alternatives A through B) were compared. Because the nature and extent of areas and resources of Tribal importance are not known, potential impacts on vegetation, minerals, cultural, and visual resources are used as proxies in this analysis. The consultation process affords both Tribes and the BLM opportunities to identify sites, interests, and values of Tribal importance and to identify mitigations and avoidance and protective measures to preserve Tribal interests.

The action alternatives represent programmatic decisions; therefore, they would have no direct effects on Tribal interests. Potential effects would be considered indirect effects because they would occur later in time and at the site-specific level. At the programmatic level of an RMP, consequences are discussed qualitatively.

Impact Analysis Area

- Direct/Indirect
 - BLM-administered lands within the Monument boundary (the decision area)
- Cumulative
 - All lands within the Monument boundary (planning area)

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The BLM has the responsibility to ensure that meaningful consultation and coordination concerning Tribal treaty rights and trust resources are conducted on a government-to-government basis with federally recognized Tribes. The BLM has an obligation to consult with federally recognized Tribes during the planning process and for all undertakings that have the potential to impact Tribal resources.
- Sacred sites and traditional cultural properties are in the decision area, but exact locations and uses are unknown and can only be identified through consultation.
- The BLM does not know the extent of current Tribal practices and trends involving natural resource use and spiritual and religious ceremonies in the planning area.
- Protecting cultural resources and certain vegetation communities, which may have special significance in Indigenous communities, across alternatives would provide protections to traditional use areas and tribally important areas and resources.
- Tribes historically used numerous places in the planning area for habitation, foraging, hunting subsistence, and spiritual and religious ceremonies. Practices that continue today include Tribal

groups visiting rock art sites, burial areas, and traditional camp and ceremonial sites, as well as gathering plants and minerals for traditional use.

- Impacts on areas and resources of Tribal interest and the severity of those impacts depend on the perspective and context of the Tribe, affected communities, or individuals. Impacts are highly subjective and depend on what is economically, environmentally, culturally, or spiritually important to affected Tribes and individuals.

Impact Analysis Indicators

- Broad changes to views or visual resources that could adversely impact ceremonial activities or sacred sites, if present
- Ground-disturbing activities that could impact resources of Tribal importance, such as cultural resources or plant species
- Increases in allowable activities or visitation that could increase the potential for impacts on resources of Tribal importance

B.4.19 Environmental Justice

Issue 1: Would proposed management result in environmental justice impacts (disproportionally high and adverse effects on minority, low-income, or Tribal populations or communities)?

Methodology

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994), requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the US. The executive order requires each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (Executive Order 12898, 59 *Federal Register* 7629, 1994).

The existence of disproportionately high and adverse human health and environmental effects from the management of BLM-administered lands has two components: 1) identification of minority, low-income, and Native American communities; and 2) an analysis of proposed actions to determine whether significant impacts from BLM activities exist. Identification of environmental justice populations allows for evaluation of potential adverse impacts on these populations.

To assess whether the alternatives would disproportionately affect minority communities negatively, the BLM assessed whether any of the alternatives would result in any adverse human or environmental impacts on any populations relying on the analysis in other resource sections. The BLM then considered whether any of the identified environmental justice communities are likely to suffer disproportionate adverse effects in terms of resources and their use.

Impact Analysis Area

- Direct/Indirect
 - The environmental justice analysis area includes Doña Ana and Luna Counties, New Mexico and El Paso County, Texas.

- Cumulative
 - Same as Direct/Indirect

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- If users of a particular resource are predominately a community of environmental justice concern, then there is a higher likelihood of disproportionate adverse impacts on that community; however, if the users are diverse, then all communities would share the impacts.

Impact Analysis Indicators

- Disproportionally high and adverse impacts

B.4.20 Social and Economic Conditions

Issue 1: How would the alternatives impact jobs and income in the socioeconomic study area?

Methodology

IMPLAN is a regional economic input-output model that provides a mathematical account of the flow of dollars and commodities through a region's economy. This model provides estimates of how a given amount of an economic activity translates into jobs and income in the region. Economic impacts based on IMPLAN modeling are described in terms of direct, indirect, and induced impacts. Direct impacts, such as income and employment, are directly affected by activity on BLM-administered lands. Indirect impacts occur when related industries gain from purchases by the directly affected businesses, such as the ranchers buying supplies from local businesses. Induced impacts are the results of spending by the local businesses' employees, such as the employees spending money in a local restaurant. Together, these are reported as the total impact.

The quantified economic analysis using the IMPLAN model provides estimates of employment in the planning area from livestock grazing and recreation on BLM-administered lands. For all economic modeling presented here, data are estimates, based on best available information. Actual impacts would vary, based on site-specific differences and changes in market demand, policy, population change in the planning area, or various other factors that could alter the economic impact of BLM-administered land use. Included narratives discuss the specific limitations of data and modeling for each specific resource use.

This analysis used IMPLAN 2019 model data. While 2020 IMPLAN model year data were available at the time of analysis, it was determined that, due to temporary economic changes associated with the COVID-19 pandemic in 2020, the data were not representative of the long-term economic trends in the area; therefore, the 2019 model data represented the best available information.

Impact Analysis Area

- Direct/Indirect
 - The analysis area includes Doña Ana and Luna Counties, New Mexico and El Paso County, Texas.

- Cumulative
 - Same as Direct/Indirect

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The analysis includes the following general assumptions for the IMPLAN model:
 - The region of analysis consists of Doña Ana County and Luna County, New Mexico, and El Paso County, Texas.
 - Values are presented in \$2021, unless otherwise noted.
 - Jobs are based on IMPLAN output and represent the annual average of monthly jobs; thus, one job may represent one job lasting 12 months or two jobs lasting 6 months each. Because jobs occurring over multiple years may not represent additional new employment opportunities (for example, one employee working for 2 years represents two jobs), results are presented in the form of annual averages. Total jobs represent direct, indirect, and induced jobs.
 - Labor income (earnings) represent all forms of employment income, including employee compensation (wages and benefits) and proprietor income. Total labor earnings include direct, indirect, and induced employment.
 - Economic output (gross regional economic output) represents the value of industry production. Total economic output includes direct, indirect, and induced value.
- Due to the minor level of contributions from minerals and forestry resources on BLM-administered lands to the planning area economy, no economic modeling was conducted for minerals and forestry/woodland resources.
- The grazing analysis is based on the AUM numbers (BLM 2021a) and value of production per AUM.
- The analysis includes the following assumptions for recreation:
 - The recreation analysis is based on total visitation numbers for local and nonlocal visitors (BLM 2021b) using a recreation spending profile from a local area (national forest data from White 2017) as a proxy for spending associated with Monument visitors.
 - Variations in the type of visitation (day or overnight) are larger than changes based on activity type (White 2017). As a result, spending differences by recreation activity are discussed qualitatively in the analysis and are not included in the economic model.
- Fiscal economic impacts are a result of the public finance and government expenditures. PILT revenue and revenue associated with direct BLM spending on operations and labor support additional expenditures in the local economy. Proposed management would not, however, result in direct or indirect changes to these streams of revenue. In addition, these revenue sources are not tracked separately for the Monument, therefore it is difficult to present New Mexico-specific associated contributions. As a result, these revenue streams are not examined in the IMPLAN model.

Impact Analysis Indicators

- Jobs and income

Issue 2: How would the alternatives impact social conditions for area residents and visitors?

Methodology

This analysis focuses on social conditions in the framework of recreation experiences. Management actions that result in changes to access to and the quality of recreation opportunities could result in the potential for increases or decreases in nonmarket use values associated with recreation enjoyed by residents and visitors. There is considerable uncertainty about the level of change to recreation visitation levels and the types of opportunities as a result of the alternatives. As such, this analysis qualitatively describes how alternatives would support certain types of recreation experiences, and could thereby result in changes to consumer surplus and recreation value for those who favor a given activity. It is important to note that increased recreation opportunities would not necessarily result in proportionate increases in participation and visitor days.

Impact Analysis Area

- Direct/Indirect
 - The analysis area includes Doña Ana and Luna Counties, New Mexico and El Paso County, Texas.
- Cumulative
 - Same as Direct/Indirect

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- None

Impact Analysis Indicators

- Changes to recreation use types and the quality of recreation experiences

Issue 3: How would the alternatives impact the benefits to people provided from natural areas?

Methodology

To assess how the alternatives would impact the benefits to people provided from natural areas, this analysis provides a qualitative discussion of how protection of species, habitat, and wildlife through special designations would result in support for or enhancement of nonmarket and cultural values.

Impact Analysis Area

- Direct/Indirect
 - The analysis area includes Doña Ana and Luna Counties, New Mexico and El Paso County, Texas.
- Cumulative
 - Same as Direct/Indirect

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- None

Impact Analysis Indicators

- Acres of protected areas such as special designations

B.4.21 Public Health and Safety

Issue 1: How would abandoned mining sites, increases or decreases in wildfire risk and recreational risk, and exposure to contaminants impact the safety of the Monument's users and local communities?

Methodology

The nature and types of potential effects on public health and safety from proposed actions under each alternative are based on BLM interdisciplinary team knowledge of the planning area using a qualitative approach.

Impact Analysis Area

- Direct/Indirect
 - All lands within the Monument boundary (planning area)
- Cumulative
 - Same as Direct/Indirect analysis area

Impact Analysis Temporal Scale

- Life of the plan

Impact Analysis Assumptions

- The potential for risk to visitor safety would increase with increasing numbers of BLM-administered land users.
- Activities and resources available in and around the planning area would continue to be important to the health and safety of current and future residents.
- All new hazardous materials and waste sites would be identified and characterized.
- Resource development activities would identify any possible generation of hazardous waste.
- The BLM's Hazard Management and Resource Restoration Program would respond to all hazardous material releases on BLM-administered lands. Emergency cleanup actions would be implemented on sites posing a substantial threat to the public and the environment.

Impact Analysis Indicators

- Number of abandoned mining sites cleaned up
- Increase or decrease in wildfire risk
- Increase or decrease in recreational risks
- Increase or decrease in exposure to contaminants

B.5 REFERENCES

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Appendix C

Socioeconomic Impact Analysis Methodology

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Appendix C. Socioeconomic Impact Analysis Methodology

C.1 THE IMPACT ANALYSIS FOR PLANNING (IMPLAN) MODEL

IMPLAN is a regional economic input-output model that provides a mathematical account of the flow of dollars and commodities through a region's economy. This model provides estimates of how a given amount of an economic activity translates into jobs and income in the region. Economic impacts based on IMPLAN modeling are described in terms of direct, indirect, and induced impacts. Direct impacts, such as income and employment, are directly affected by activity on Bureau of Land Management (BLM)-administered lands. Indirect impacts occur when related industries gain from purchases by the directly affected businesses, such as the ranchers buying supplies from local businesses. Induced impacts are the results of spending by employees, such as the employees spending money in a local restaurant. Together, these are reported as the total impact.

The quantified economic analysis using the IMPLAN model provides estimates of employment in the Planning Area from livestock grazing and recreation on BLM-administered lands. For all economic modeling presented here, data are estimates, based on best available information. Actual impacts would also vary, based on site-specific differences and changes in market demand, policy, population change in the Planning Area, or various other factors that could alter the economic impact of BLM-administered land use. Included narratives discuss the specific limitations of data and modeling for each specific resource use.

This analysis used IMPLAN 2019 model data (<https://implan.com/data>). While 2020 IMPLAN model year data were available at the time of analysis, it was determined that, due to temporary economic changes associated with the COVID-19 pandemic in 2020, that this data was not representative of the long-term economic trends in the area, and therefore the 2019 model data represented the best available information. Before running the model, all cost and price data were converted to a consistent dollar year (2019), using sector-specific adjustment factors from the IMPLAN model.

The analysis includes the following general assumptions for the IMPLAN model:

- The region of analysis consists of Dona Ana County and Luna County, New Mexico and El Paso County Texas.
- Values are presented in \$2021, unless otherwise noted.
- Jobs are based on IMPLAN output and represent the annual average of monthly jobs; thus, one job may represent one job lasting 12 months or two jobs lasting six months each, for example. Because jobs occurring over multiple years may not represent additional new employment opportunities (e.g., one employee working for two years represents two jobs), results are presented in the form of annual averages. Total jobs represent direct, indirect, and induced jobs.

- Labor Income (earnings) represent all forms of employment income, including employee compensation (wages and benefits) and proprietor income. Total labor earnings include direct, indirect, and induced employment.
- Economic output (gross regional economic output) represents the value of industry production. Total economic output includes direct, indirect, and induced value.

C.1.1 Recreation

Recreation plays a large role on public lands in the Monument, and many recreationists rely on BLM-administered lands for their activities. While entry fees are a source of income for the BLM, recreationists also spend money in the area on food, lodging, supplies, fuel, and other commodities. This spending has an economic impact on the local economy, and many smaller communities rely on this source of income from outside visitors.

Traditionally, an economic impact analysis for recreation measures only the effects of “new” income in the Study Area, based on spending of visitors on local recreation. The premise assumes spending by local residents does not represent an additional source of economic activity in the area, and spending by local residents would continue, using local substitute recreation opportunities. Local residents, however, make considerable recreation-related expenditures, such as spending on gas and food, for example; therefore, the Draft Environmental Impact Statements (DEIS) includes an analysis of total economic contribution from recreation, based on spending by local residents and visitors.

The quantitative economic analyses in for recreation consist of one set of figures for all alternatives. The estimates do not address differences between the alternatives, because the differences in management actions affecting recreation cannot be quantified with a reasonable level of certainty. Differences in impacts between the alternatives are discussed qualitatively.

The two determining factors of economic input for recreation are 1) visitor numbers and 2) how much each visitor spends while in the area. Average visitor data from the BLM Recreation Management Information System for fiscal years 2017 through 2021 was used to estimate current visitor numbers (see **Table C-1**).

**Table C-1
Annual Visitation to Organ Mountains Desert Peaks National Monument**

Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020	Fiscal Year 2021	5-Year Average (Baseline Visitation Estimate)
420,714	415,690	493,967	296,603	662,445	457,889

Sources: BLM 2021c

Visitation is anticipated to increase over the planning period as a result of population growth. Population projections from the New Mexico and Texas demography office were used to project visitor numbers over the next 20 years. This data will be used to discuss the anticipated growth levels in recreation related economic contributions over the planning period. Increases in visitation could vary, based on regional and national economics and other factors.

Information is available from a OMDPNM 2018 visitor survey (Fix et al. 2018) for the percent of local and non-local visitors (where non-local is identified as those residing outside of the economic analysis area), as well as for the percent of visits that were overnight versus day trips. The 2018 study also included information on type of overnight visit (e.g. camping on BLM lands or stay in in hotel). In order to separate out local and non-local visitation data and utilize existing spending profile data, information from the Fix et al study was utilized in coordination with US Forest Service’s National Visitor Use Monitoring (NVUM) data for Gila National Forest, which was determined to represent the most comparable forest in the area based on visitation data.

The visitor trip type segments help explain differences in spending of distinct subgroups of visitors and the “segmentation yields total spending averages for general recreation that are statistically and practically different for each trip segment” (White 2017).

User groups are defined based on the NVUM, as follows:

- Local visitors on day trips (L-Day)
- Local visitors staying overnight on BLM-administered lands (L-OVN-BLM)
- Local visitors staying overnight off BLM-administered lands (L-OVN)
- Out-of-town visitors on day trips (NL-Day)
- Out-of-town visitors staying overnight on BLM-administered lands (NL-OVN-BLM)
- Out-of-town visitors staying overnight off BLM-administered lands (NL-OVN)

White (2017) included an additional category, non-primary visitors. To conservatively estimate potential expenditures associated with activity on BLM-administered lands, these visitors are estimated to use the same expenditure data as local day use visitors.

Recreation trip type market segments data from the Gila National Forest non-ski area allocations were modified with OMDPNM specific info based on data from Fix et al.’s 2018 study.

**Table C-2
Estimated General Recreation Segment Shares by Party Type (percent)**

Non-local			Local			Total
Day	Overnight on BLM Lands	Overnight Other	Day	Overnight on BLM Lands	Overnight Other	
5%	12%	16%	60%	4%	3%	100%

Source: Adapted from Fix et al. 2018 and White 2017 (Gila National Forest visitor use monitoring trip type segment shares, excluding use at ski areas)

BLM data are collected in visits, and available spending data are collected by visitor parties. Party size varies by whether it is a day or overnight visit. Recreation data are therefore modified, from the number of visits to the number of parties, based on a party size of 2 to 3.4 people, specific to visit type. Party size is based on Gila National Forest visitor use monitoring data (White 2017).

Spending profiles for recreationists in the Planning Area are assumed to be similar to those determined for other federal lands. Average spending levels for Forest service visitors are used as a proxy for BLM spending. White (2017) states that variations in type of visitation (i.e., day or overnight) are likely to be

larger than changes based on activity type. As a result, spending differences by recreation activity are discussed qualitatively in the analysis.

Table C-3
Spending by Trip Type, in 2021 Dollars, per Party per Trip

Spending	Non-local			Local			All Visits
	Day	Overnight on BLM land	Overnight-Other	Day	Overnight BLM land	Overnight-Other	
Total spending per trip	\$74.40	\$269.96	\$650.68	\$38.54	\$195.36	\$298.20	\$471.56

Source: Adapted from White 2017 (average spending level data)

Note: Adjusted to 2021 dollars, using US Bureau of Labor Statistics Consumer Price Index Inflation Calculator. Non-primary visits combined with local day visits are assumed to have the same average spending.

Spending was segmented into the following IMPLAN sectors based on percent expenditures from White (2017) by trip type.

Table C-4
Visitor Spending Category and IMPLAN sector crosswalk

Spending Category	IMPLAN Sector
Motel	507 Hotels and motels
Camping	508 Other accommodations
Restaurant	509 Full-service Restaurants
Groceries	406 Retail, food and beverage
Gas and Oil	408 Retail, gas stores
Other transportation	450 Auto equipment rental and leasing
Entry fees	528 Other federal government
Recreation and entertainment	504 Other amusement and recreation industries
Sporting goods	410 Retail, sporting goods, hobbies
Souvenirs and other expenses	412 Retail, miscellaneous

All data were adjusted for inflation using the US Bureau of Labor Statistics Consumer Price Index Inflation Calculator.

To determine the direct economic inputs, the total visits were divided into trip types into based on relevant percent of visit types as noted in **Table C-2**. For each segment, recreation spending was divided by the party size. Total spending for each trip segment type was then divided into the corresponding spending profile for each of the economic sectors. Total direct spending across all trip segment type was summed to yield the total direct economic contribution estimates within each IMPLAN sector. This value was entered into the region specific IMPLAN model to determine indirect and induced employment and expenditures for current recreation levels.

C.1.2 Livestock Grazing

Many ranchers use BLM-administered lands to graze their livestock, either in conjunction with their private land or entirely on BLM-administered lands. Livestock grazing represents a large economic sector in many parts of the western US and drives the economy in many rural areas. Ranchers lease grazing allotments

from the BLM using animal unit month (AUM), which is the amount of forage that a particular type of livestock consumes in a month. The BLM determines a sustainable level of AUMs on each allotment based on plant communities and vegetation condition; it may lease up to this maximum number to local ranchers. Often, not all AUMs that are allotted are used.

The two determining factors for the economic impact of livestock grazing are AUMs used and the revenue from production for both cattle and sheep. Their revenue includes both the cost to raise the animal and the income provided to the proprietor. For this document, two scenarios were modeled: the maximum AUM scenario, where all of the permitted AUMs were used, and the average or billed AUM scenario, where only a certain portion of AUMs were used.

The maximum AUM scenario is based on the total permitted level. To determine the level of billed AUMs, the economic impact estimates for livestock grazing were based on the last decade (2010-2020) of billed AUMs of forage use in the Planning Area, or 55,828 AUMs (see table below), approximately 65 percent of permitted AUMs.

**Table C-5
Billed and Permitted AUMS (2010–2020)***

Year	Authorized AUMs**	Billed AUMs
2010	86,420	49,359
2011	86,420	51,077
2012	86,420	49,332
2013	86,420	41,168
2014	86,420	58,027
2015	86,420	68,462
2016	86,420	57,310
2017	86,420	64,783
2018	86,420	66,376
2019	86,420	57,593
2020	86,420	50,620
Average	86,420	55,828

Source: BLM 2021b

* This table includes the Altamira and Picacho Peak allotments. While these allotments fall partially within the Monument, they are billed under BLM-administered Prehistoric Trackways National Monument, however, they are included in this table for consistency. AUM refers to animal unit month.

** AUMs authorized during these years (2010-2020) were 86,420 AUMs, however, current authorized AUMs are now 84,943. Livestock grazing economic modeling was based on a 10-year average of billed AUMs (from 2010-2020), at 55,828 AUMs.

Based on current kind of livestock, it is assumed that all AUMs area for cattle. Estimated gross production value per cow/steer is \$735 in 2021 dollars, based on averaged data from 2012 to 2021 from Economic Research Service (2021).

The economic value of forage is estimated based on the value of production associated with forage. To determine economic value of forage, the number of AUMs for each animal class was converted into equivalent heads of livestock, using the conversion rate of an average of 1 cow-calf pair per 16 AUMs (following Workman [1986]); thus, the average value of an AUM can be estimated using data on the value of cattle production per bred cow and dividing by 16.

Table C-6
Livestock production value (2012–2021)

Year	Value of Production per Breed Cow (\$)
2012	744.93
2013	780.5
2014	1,076.00
2015	1,015.79
2016	704.62
2017	710.2
2018	589.29
2019	558
2020	565.77
2021	606.07
Average	735.17

Source: ERS 2021

Values for cattle are further adjusted by a factor of 1.2 per cow/steer, to account for the fact that most cattle in the Planning Area represent cow-calf pairs. Applying this number to the value per cow/steer provides an estimate value of production per AUM. Total value per cattle AUM is estimated at \$54.4, in 2021 dollars (see **Table C-7**, below).

Table C-7
AUM Value

Livestock	Production Value	AUM/Animal*	Value/AUM	Cow-Calf Adjustment*	Adjusted Value of Production per AUM
Cattle	\$735	16	\$45.95	1.2	\$55.14

Sources: ERS 2021; *Workman 1986

The costs of production for cattle was disaggregated across the following IMPLAN sectors based on New Mexico State University Livestock cow/calf medium operation enterprise budget for southwestern New Mexico (New Mexico State University 2019):

- 11 Beef and Cattle Ranching and Farming
- 19 Support activities for agriculture and forestry
- 4 Veterinary services
- 528 Other Federal government enterprises
- 395 Wholesale machinery equipment and supplies
- 400 Wholesale other non-durable goods
- 60 Maintenance and repair construction of nonresidential structures
- 515 Commercial and Industrial machinery and equipment repair
- 441 Monetary authorities and depository credit intermediation
- 417 Truck Transportation
- 445 Insurance agencies

The number of AUMs were multiplied by total AUM values, disaggregated into the appropriate sectors to obtain direct input values for the IMPLAN model for cattle. Direct, indirect, and induced impacts from cattle for a given alternative were then modeled.

C.1.3 Other

Fiscal economic impacts are a result of the public finance and government expenditures. Payment in Lieu of Taxes (PILT) revenue and revenue associated with direct BLM spending on operations and labor support additional expenditures in the local economy. Proposed management would not, however, result in direct or indirect changes to these streams of revenue. In addition, these revenue sources are not tracked separately for the Monument, therefore it is difficult to present New Mexico-specific associated contributions. As a result, these revenue streams are not examined in the IMPLAN model.

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